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# MANUFACTURING

JANUARY 1982

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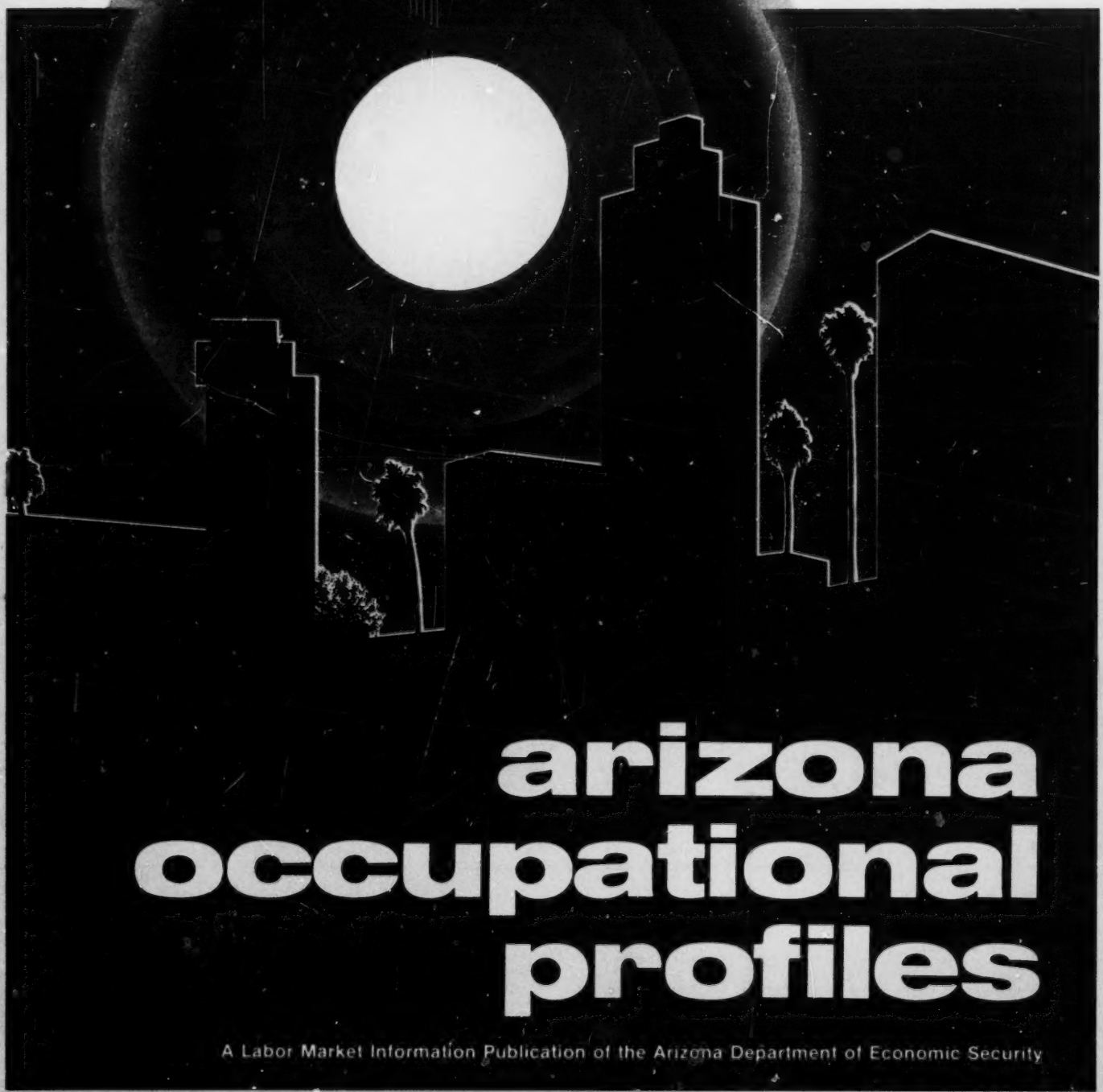


# arizona occupational profiles

A Labor Market Information Publication of the Arizona Department of Economic Security

UTAH
COCONINO
MOHAVE
KINGMAN
FLAGSTAFF
NAVAJO
APACHE
HOLBROOK
ST. JOHNS
CALIFORNIA
NEW MEXICO
PRESCOTT
YAVAPAI
GILA
PHOENIX
GLOBE
CLIFTON
GREENLEE
YUMA
MARICOPA
FLORENCE
SAFFORD
PINAL
YUMA
GRAHAM
TUCSON
PIMA
COCHISE
MEXICO
SANTA CRUZ
BISBEE
NOGALES
ARIZONA

# OCCUPATIONAL PROFILES

This Occupational Profile is one in a series of publications produced from information developed by the Occupational Employment Statistics survey. The survey is used to collect employment data, by county, for over 1,000 occupations in Arizona. From these surveys, which require the cooperation of the Arizona business community, current employment in the various occupations is determined, and from this an occupational outlook is formulated. The Occupational Profiles contain the survey findings and examine, individually, the industries of Arizona.

Surveyed industries for which profiles are now available include:

Mining
Finance, Insurance, and Real Estate
Construction
Services
Hospitals
Government
Trade
Education Services
Manufacturing
Transportation, Communication, and Public Utilities

For further information, or to comment on any aspect of this program, please write to the address on the back cover.

# INDUSTRY INFORMATION

## INDUSTRY DESCRIPTION

Occupational estimates for the Manufacturing Industry in Arizona are provided in this publication for the State and counties. Firms included represent those involved in the manufacture of both durable and nondurable goods.

Manufacturers engage in the mechanical or chemical transformation of materials or substances into new products and in assembling component parts of manufactured products. Also included are firms engaged in the smelting and refining of metals.

A detailed description of the types of firms surveyed is found in the Standard Industrial Classification (SIC) Manual under codes 20 through 39.

## INDUSTRY CHARACTERISTICS

Of the more than one million workers in Arizona, nearly 153,000 (15 percent) were employed in manufacturing in 1980. Ranking behind trade, services, and government, manufacturing is Arizona's fourth-largest industry based on employment. The bulk of employment in manufacturing (78 percent) is involved in the production of durable goods - primarily machinery. Manufacturers of electronic computing equipment, semiconductors, and related products account for approximately 70 percent of the employment in machinery manufacturing.

FIGURE 1: DISTRIBUTION OF MANUFACTURING EMPLOYMENT UNITED STATES - 1979

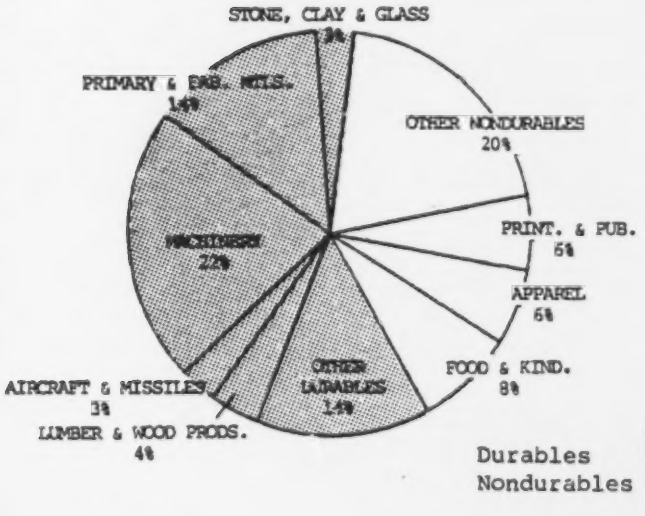
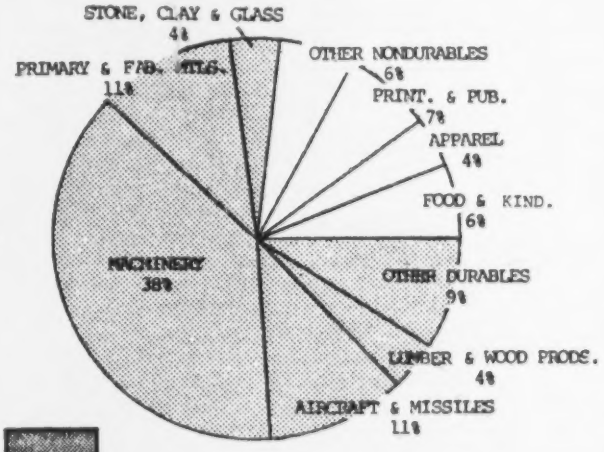



FIGURE 2: DISTRIBUTION OF MANUFACTURING EMPLOYMENT ARIZONA - 1980



The most significant differences between the State and national distribution of manufacturing employment is the prominence of machinery and aircraft manufacturing in Arizona, and the large textile-manufacturing segment nationally which is relatively small locally.

Three of every four persons working in manufacturing are employed in Maricopa County - the remainder divided between Pima County and the balance of state.

FIGURE 3: DISTRIBUTION OF MANUFACTURING EMPLOYMENT METRO COUNTIES - 1980

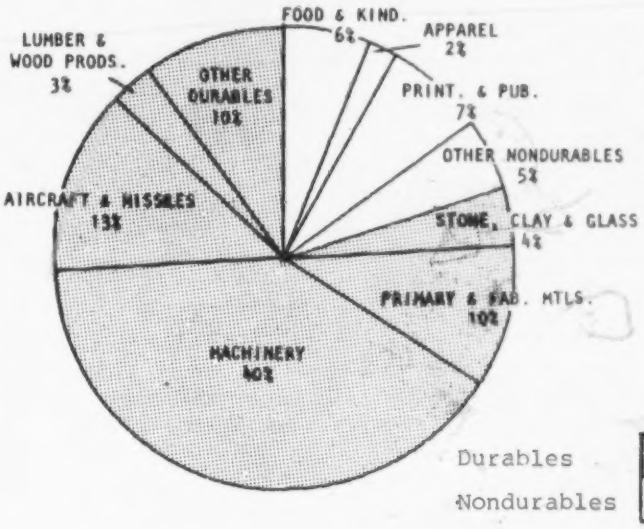
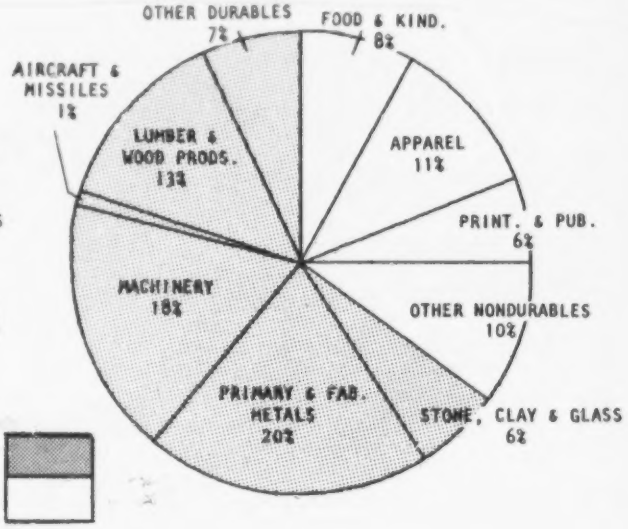
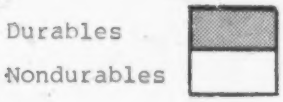



FIGURE 4: DISTRIBUTION OF MANUFACTURING EMPLOYMENT BALANCE OF STATE - 1980




Compared to Maricopa and Pima counties, the balance of the state is, to a greater degree, involved in the manufacture of nondurables - particularly textile goods and food products. Manufacturing of food products is dominated by those producing bottled and/or canned drinks (in Graham, Navajo, and Yuma counties) and cottonseed oil and cottonseed by-products (in Pinal County).

The largest component of the textile sector is the manufacturing of men's and boys' clothing - particularly shirts and underwear.

Of the nonmetro counties, Mohave has the largest manufacturing employment - most of which is involved in the manufacture of power-driven hand tools. Coconino County, however, with its logging camps and contractors, claims the greatest number of manufacturing firms.

FIGURE 5: MANUFACTURING EMPLOYMENT BY COUNTY - JUNE 1980

| County | Firms | Employ. |
|---|---|---|
| Apache | 19 | 471 |
| Cochise | 46 | 2,065 |
| Coconino | 85 | 2,308 |
| Gila | 24 | 2,271 |
| Graham/Greenlee | 12 | 779 |
| Maricopa | 2,033 | 112,394 |
| Mohave | 68 | 2,922 |
| Navajo | 49 | 1,360 |
| Pima | 427 | 21,317 |
| Pinal | 62 | 2,589 |
| Santa Cruz | 33 | 1,114 |
| Yavapai | 77 | 1,385 |
| Yuma | 56 | 1,589 |
| STATE | 2,991 | 152,564 |

The following table provides a profile of each county's manufacturing employment. Readily apparent are several counties whose manufacturing profile is dominated by a single industry. The manufacture of primary and fabricated metals (copper smelting) in Gila County and lumber and lumber products in Apache County are most notable.

FIGURE 6: COUNTY MANUFACTURING PROFILE - 1980 (PERCENT)

| | Total | Aircraft & Missiles | Lumber | Stone, Clay & Glass | Primary & Fab. Mtls. | Machinery | Food & Kind. | Print. & Pub. | Apparel | Other |
|---|---|---|---|---|---|---|---|---|---|---|
| Apache | 100% | * | 70 | 2 | * | 25 | * | * | * | 2 |
| Cochise | 100% | 3 | * | 10 | 27 | 9 | 12 | 8 | 16 | 15 |
| Coconino | 100% | * | 39 | 3 | 7 | 3 | 12 | 6 | 5 | 24 |
| Gila | 100% | * | 8 | 4 | 83 | * | * | 4 | * | 1 |
| Graham/Greenlee | 100% | * | * | 1 | 55 | * | 15 | 5 | * | 24 |
| Maricopa | 100% | 10 | 3 | 3 | 10 | 42 | 6 | 7 | 3 | 16 |
| Mohave | 100% | * | * | 5 | 6 | 65 | * | 5 | 3 | 15 |
| Navajo | 100% | * | 37 | 5 | * | * | 8 | 4 | * | 45 |
| Pima | 100% | 27 | 2 | 5 | 8 | 33 | 6 | 9 | 1 | 9 |
| Pinal | 100% | * | 10 | 3 | 24 | 5 | 14 | 4 | 18 | 22 |
| Santa Cruz | 100% | * | * | 1 | 1 | 36 | 5 | 5 | 26 | 26 |
| Yavapai | 100% | 1 | 5 | 20 | 1 | 34 | * | 7 | 14 | 18 |
| Yuma | 100% | 6 | 2 | 8 | 4 | 5 | 16 | 10 | 43 | 6 |

PERCENT

In 1980, manufacturing establishments numbered 2,885, the bulk of which were printing and publishing firms (553); manufacturers of machinery, other than electrical (390); and firms that manufacture fabricated metal products other than machinery (303). Most manufacturing firms are relatively small (70 percent employ less than 20 persons); yet, seven percent of Arizona's manufacturers employ 112,000 employees - or 73 percent of the industry's total. Manufacturing firms are, on the average, much larger than those in other industries.

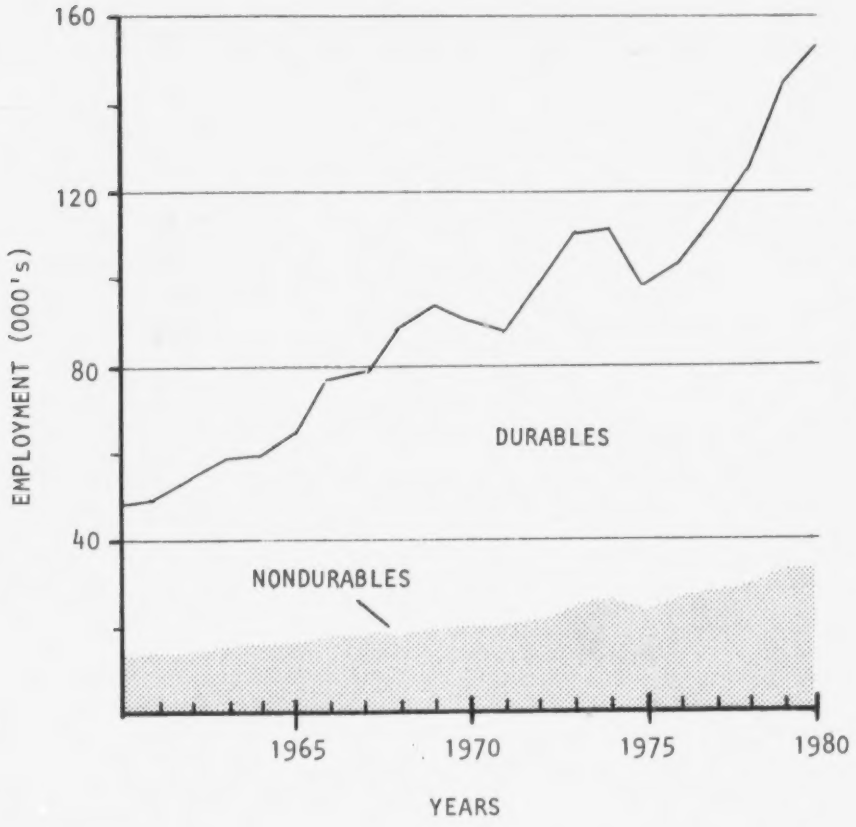
FIGURE 7: MANUFACTURING ESTABLISHMENTS BY SIZE
ARIZONA 1980

| Size Class | 0-9 | 10-19 | 20-49 | 50-99 | 100-249 | 250-499 | 500-999 | 1000+ |
|---|---|---|---|---|---|---|---|---|
| Establishments | 1,536 | 492 | 450 | 191 | 136 | 44 | 20 | 16 |
| Employment | 5,336 | 6,917 | 14,117 | 14,155 | 20,184 | 15,926 | 13,826 | 62,043 |

## INDUSTRY TRENDS

Adding nearly 56,000 jobs during the period 1970 to 1980, employment growth in Arizona's manufacturing industry has accelerated in recent years. From a national perspective, the concentration of manufacturing employment is shifting away from the eastern and midwestern industrial complex and is tending to establish greater geographical homogeneity. Like other sunbelt states, Arizona is experiencing an economic boost from inmigration and the relocation and establishment of new businesses.

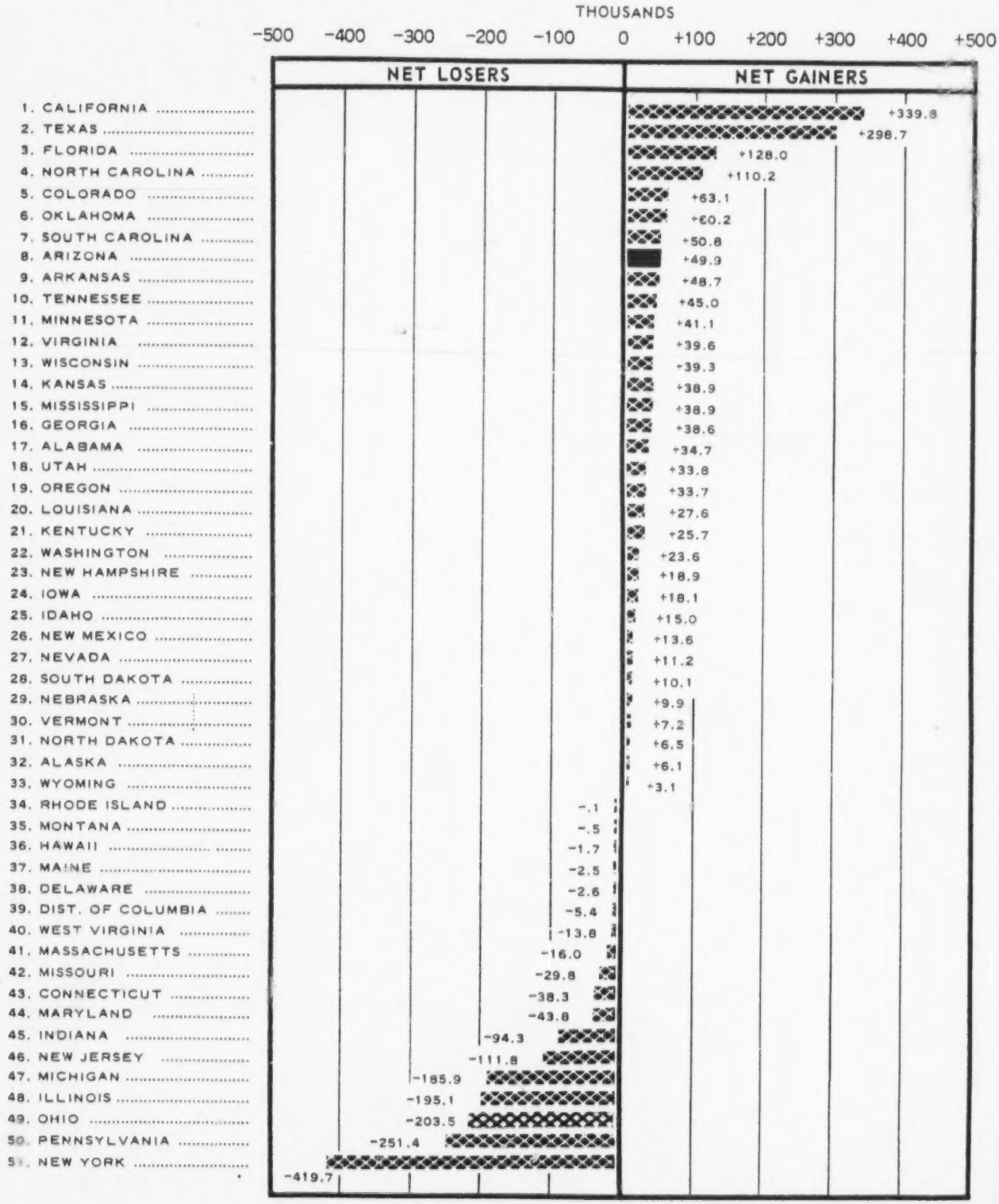
FIGURE 8: ARIZONA MANUFACTURING EMPLOYMENT 1960 - 1980




In terms of industry growth, manufacturing in Arizona expanded nearly 38 percent during the 70's (compared to 5 percent nationally) and ranked seventh among the eight major industry groups. Since 1977, however, manufacturing employment growth has been outpaced only by construction, which began its periodic upswing in 1976. For the same three year period, employment growth in the durables sector outpaced nondurables 38 percent to 23 percent.

FIGURE 9

## NET GAINS AND LOSSES IN AVERAGE MANUFACTURING EMPLOYMENT BY STATE, 1969 TO 1980




Source: Bureau of Labor Statistics, U.S. Department of Labor.

FIGURE 10: A COMPARISON OF INDUSTRY GROWTH RATES IN ARIZONA

| | Employment (000's) | | | Percent Growth | Percent Growth |
|---|---|---|---|---|---|
| | 1970 | 1977 | 1980 | 1970-80 | 1977-80 |
| Manufacturing | 91.2 | 113.9 | 152.6 | 67.3 % | 34.0 % |
| Mining | 20.6 | 21.5 | 20.4 | -.1 | -5.1 |
| Construction | 37.1 | 52.2 | 75.2 | 102.7 | 44.1 |
| TCPU | 30.0 | 41.5 | 50.2 | 67.3 | 21.0 |
| Trade | 127.0 | 196.5 | 240.6 | 89.4 | 22.4 |
| FIRE | 30.5 | 45.6 | 57.4 | 88.2 | 25.9 |
| Services | 91.5 | 156.2 | 205.1 | 124.2 | 31.3 |
| Government | 119.5 | 181.9 | 201.6 | 68.7 | 10.8 |
| TOTAL | 547.4 | 809.4 | 1,003.3 | 74.7 % | 24.0 % |

Machinery manufacturing provided most of the impetus in the durable sector while printing and publishing and the production of chemicals and chemical products prevailed in the nondurables. Although several manufacturing industries registered strong growth rates, manufacturers of machinery provided the most job opportunities - expanding employment more than 18,000 in three years. The largest components in the "All Other Manufacturing" category in

FIGURE 11: EMPLOYMENT CHANGE IN VARIOUS ARIZONA MANUFACTURING INDUSTRIES (1977 - 1980)

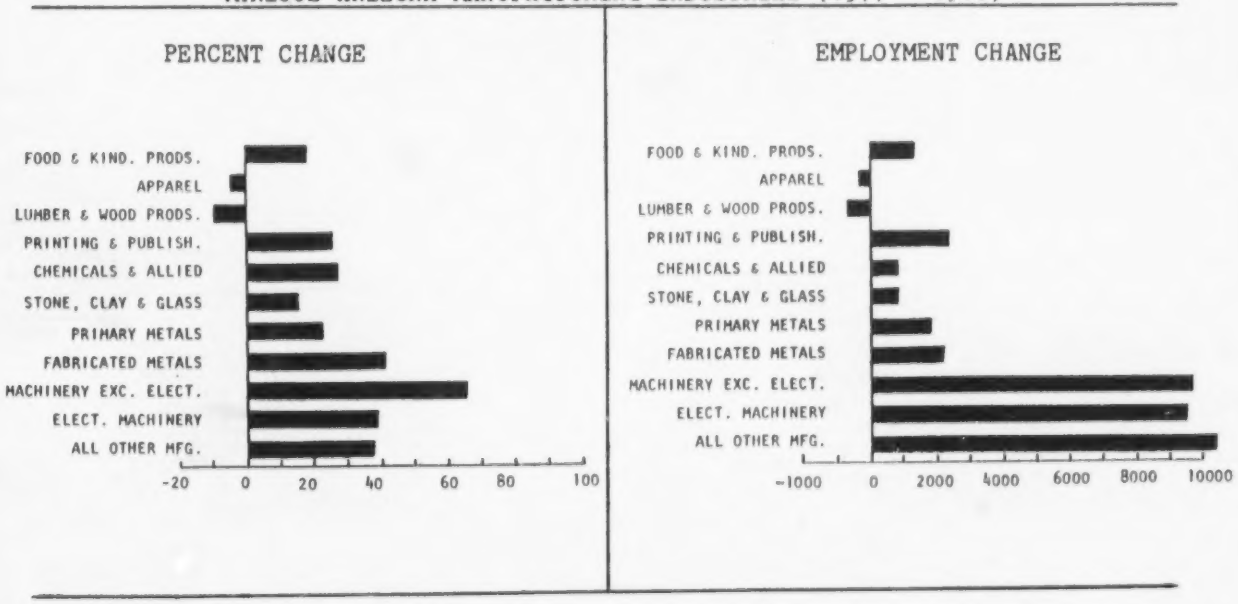



figure 11 are manufacturers of transportation equipment (predominately aircraft and parts) and engineering and scientific instruments.

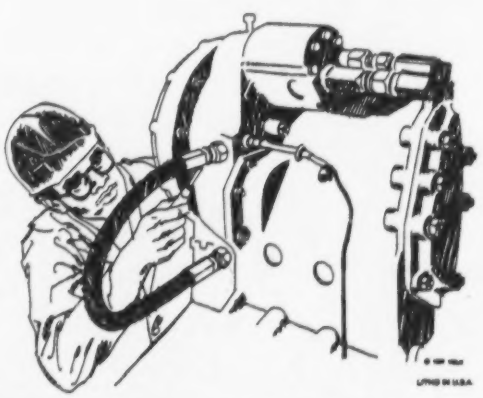
Maricopa County provided most of the employment opportunities in the industry since 1977; however, Yuma and Pima counties registered the strongest growth rates - increasing 66 and 54 percent, respectively.

Manufacturing employment is expected to maintain a higher-than-average growth rate through 1984 - bulwarked by the high technology areas of electronics and aerospace. The ever-increasing reliance on computers and higher levels of defense spending in response to Reagan Administration priorities will provide impetus for the industry - especially in Maricopa and Pima counties. Furthermore, with rising transportation costs and the population shift to the west and south, manufacturing firms will find it necessary to move closer to their markets. Providing stability to the industry's employment growth will be several firms involved in manufacturing "high tech" products. Such firms include: IBM, Motorola, Burr-Brown, Sperry, Honeywell, and Gates-Learjet, among others.

Of concern to Arizona's manufacturers, however, is the less-than-solid financial condition of the world's airlines and competition from foreign manufacturers. Japan, for example, has targeted its aerospace industry for financial assistance, as it has done in the past with electronics and autos. Europe has also strengthened its aircraft industries, as have Canada, Brazil, Israel, Indonesia, and Australia.

Demand for computers and related equipment is expected to increase rapidly as computers are used to solve an increasing array of problems in business, industry, and government. Using the computer to control the flow of automobile traffic, to aid physicians in diagnosing medical problems, and to help students learn more quickly are just a few of the new computer applications. In addition to new applications, further price reductions will bring the computer systems within reach of more and more individuals and small organizations.

Although relatively rapid expansion of manufacturing employment is expected, Arizona's economy (like the nation's) is evolving into a primarily service - producing economy rather than goods - producing. Accounting for nearly 17 percent of Arizona's workers in 1970, manufacturing's share of employment dropped to 15 percent by 1980 as trade and services continue to expand. The importance of manufacturing is not to be understated, however, as it is a driving force in the local economy.

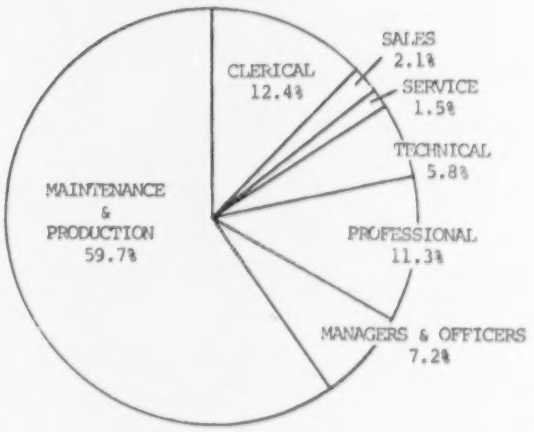


# OCCUPATIONAL INFORMATION

## OCCUPATIONAL ANALYSIS

As one would expect, maintenance and production workers dominate in manufacturing - accounting for 60 percent of the industry's employment. Included in this category is a wide range of occupations which includes mechanics and repairers, assemblers, truck drivers and other operatives; and craft workers such as carpenters and electricians. Numbering nearly 14,000 in 1980, electrical and electronic assemblers represent Arizona's largest manufacturing occupation and contribute significantly to the size of the

FIGURE 12: OCCUPATIONS IN ARIZONA'S MANUFACTURING INDUSTRY MAY 1980



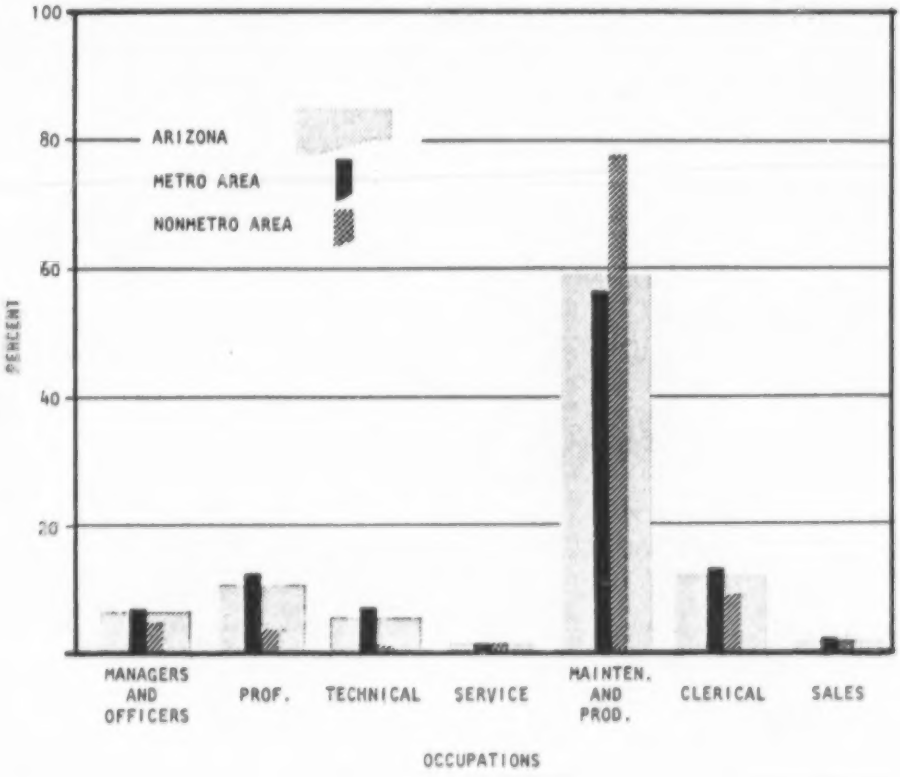

maintenance and production category. Ranking a distant second and third to maintenance and production personnel are clerical workers (12 percent) and professional workers (11 percent).

A review of Arizona's largest manufacturing occupations reflects the significance of electronics-related firms in the State. Three of the top five occupations are directly related to the production of electrical goods. Occupations common to all types of manufacturing operations also rank high. These occupations include clerical workers such as secretaries, general office clerks and stock clerks; operatives, such as truck drivers and delivery workers; and managers and supervisors.

Comparison of the staffing patterns for metropolitan and nonmetropolitan counties indicates a larger percentage of professional and technical personnel and a smaller share of maintenance and production workers in Maricopa and Pima counties. A greater emphasis on research and development and the location of

administrative services in Phoenix and Tucson contribute to this geographic variation. Research and development is especially vital to the aerospace and electronics industries which are active in these cities. More than 1,500 of

FIGURE 13: OCCUPATIONS IN MANUFACTURING
BY AREA - MAY 1980




Arizona's 1,600 aeronautical engineers are working in Maricopa County, and of the State's estimated 4,760 electrical and electronics engineers, 4,080 work in Maricopa County, 640 in Pima County, and less than 35 in the balance of state. More than half of the electrical and electronic engineers are engaged in the manufacture of semiconductors and related solid-state devices, and 35 percent are employed by firms manufacturing computers and peripheral equipment.

Employment in each of the seven major occupational classes will continue to expand - although at different rates. These varying growth rates create an ever-changing occupational profile as the industry adjusts to take advantage of new technology and reacts to new administrative policies, energy situations, and a host of other internal and external forces.

FIGURE 14: MOST FREQUENTLY REPORTED
OCCUPATIONS IN ARIZONA'S MANUFACTURING INDUSTRY

| | Employment 1980 | Job Openings 1980-1984 |
|---|---|---|
| Electrical and Electronic Assemblers | 13,796 | 5,497 |
| Managers and Officers | 11,023 | 4,594 |
| Electrical and Electronic Engineers | 4,757 | 2,000 |
| Supervisors, Nonworking | 4,610 | 1,555 |
| Electrical and Electronic Technicians | 4,071 | 1,378 |
| Inspectors | 3,118 | 1,354 |
| Sales Reps., Agents or Associates | 2,857 | 939 |
| Secretaries | 2,850 | 1,463 |
| Truck Drivers | 2,774 | 761 |
| General Clerks, Office | 2,508 | 1,284 |
| Assemblers | 2,119 | 785 |
| Machinists | 2,083 | 822 |
| Sewing Machine Opers., Regular Equip.- Garment | 2,038 | 425 |
| Delivery and Route Workers | 1,900 | 337 |
| Assemblers, Other | 1,854 | 1,080 |
| Stock Clerks, Stockroom, Warehouse or Storage Yard | 1,721 | 765 |
| Welders and Flamecutters | 1,697 | 648 |
| Production Clerks &/or Coordinators | 1,618 | 714 |
| Aeronautical Engineers | 1,589 | 693 |
| Testers | 1,582 | 660 |
| Industrial Engineers | 1,564 | 823 |
| Production Packagers, Hand or Machine | 1,419 | 407 |
| Maintenance Repairers, General Utility | 1,305 | 396 |
| Machine Tool Operators, Combination | 1,273 | 485 |
| Electro-Mechanical Equipment Assemblers | 1,268 | 942 |
| Janitors, Porters, and Cleaners | 1,265 | 506 |
| Helpers Trades | 1,257 | 399 |
| Lathe &/or Turning Machine Opers., Metal | 1,142 | 549 |
| Industrial Truck Operators | 1,120 | 302 |
| Drafters | 1,081 | 382 |
| Computer Programmers | 1,060 | 598 |
| Accounting Clerks | 1,029 | 472 |
| Accountants & Auditors | 1,016 | 445 |
| Purchasing Agents &/or Buyers | 1,013 | 317 |
| Mechanical Engineering Techs. | 985 | 324 |
| Sheet Metal Workers | 979 | 339 |
| Mechanical Engineers | 922 | 264 |

For the foreseeable future, professional and technical personnel are expected to increase their share of employment, while maintenance and production workers (especially operatives) will account for a smaller share. Continued, and perhaps increased, emphasis on research and development in manufacturing (and particularly the electronics industry) will insure demand for engineers, scientists, and technical personnel. Electrical and electronic engineers, which is the largest professional occupation category in manufacturing, accounts for three percent of all manufacturing employment and more than seven percent of electronics related manufacturing employment. With their knowledge of mathematics, science, and electronics, engineers are involved with production and quality control problems as well as research and development. Most are specialized and work in a specific area, such as in the design and implementation of solid-state circuitry in radar, computers, and calculators. In the future, more opportunities will also be available for engineers in sales departments because the industry's products will require sales personnel with technical backgrounds.

In Arizona's manufacturing industry, there are four times as many electrical and electronic technicians as there are employees in any other technical occupation. These technicians help engineers design and build experimental models, set-up and repair electronic equipment for customers, and/or do complex inspection and assembly work. "In the future, technical personnel with backgrounds in chemistry will be especially attractive to manufacturers of integrated circuits and other electronic components" says Gene Burger, Compensation Manager at Motorola. The manufacture of wafers involves chemical processes that require knowledge of chemistry and its applications. Growth in manufacturing and the need to maintain and repair an ever-increasing number of electronic products used by industry and consumers will also contribute to a strong and stable demand for technical personnel.

Although maintenance and production workers will account for a smaller share of manufacturing employment in the coming years, this occupational group will, by far and away, provide the most opportunities to jobseekers. As the industry grows, most newly-created jobs will be in this category. Generally characterized by higher separation rates than professional and technical occupations, many openings will also transpire as workers leave the labor force. Assemblers, which dominate this category, are mainly semiskilled workers who assemble components, assemblies, or complete products by hand and with small tools. Machines are increasingly being used to assemble components which involve simple and repetitive assembly operations as in the manufacture of circuit boards. Strong demand for assemblers, created by industry expansion and turnover, will be dampened, somewhat, by this mechanization of assembly-line operations.

Laborers and other unskilled workers will also feel the pressures of mechanization. Automation, coupled with the relatively large work force, will make job-hunting competitive for these workers.

Figure 15 lists, by county, those occupations most frequently reported and those with the greatest number of projected openings. The "Openings" column represents job opportunities due to growth of the industry and separations from the labor force. They do not reflect openings resulting from turnover.

FIGURE 15: LARGEST AND HIGHEST DEMAND OCCUPATIONS IN MANUFACTURING

MAY 1980

| LARGEST OCCUPATIONS | ESTIMATED EMPLOYMENT | PCT. OF COUNTY TOTAL | HIGHEST DEMAND OCCUPATIONS 1979-1983 | OPENINGS 1980-1984 |
|---|---|---|---|---|
| APACHE | | | | |
| Assemblers | 91 | 19.3% | Assemblers | 29 |
| Truck Drivers | 34 | 7.2 | Truck Drivers | 8 |
| Planer Operators | 21 | 4.5 | Managers & Officers | 6 |
| Managers & Officers | 20 | 4.2 | Planer Operators | 6 |
| Logging Tractor Operators | 19 | 4.0 | Sorter Operators, Green Lumber | 6 |
| COCHISE | | | | |
| Sewing Machine Operators, Special Equip.-Garment | 250 | 12.1% | Assemblers | 57 |
| Assemblers | 153 | 7.4 | Sewing Machine Opers., Special Equip.-Garment | 41 |
| Managers & Officers | 93 | 4.5 | Managers & Officers | 27 |
| Supervisors, Nonworking | 88 | 4.3 | Supervisors, Nonworking | 21 |
| Maintenance Repairers, General Utility | 47 | 2.3 | Maintenance Repairers, General Utility | 11 |
| COCONINO | | | | |
| Truck Drivers | 212 | 9.2% | Truck Drivers | 55 |
| Managers & Officers | 146 | 6.3 | Managers & Officers | 48 |
| Supervisors, Nonworking | 69 | 3.0 | Supervisors, Nonworking | 23 |
| Machinists | 53 | 2.3 | Machinists | 17 |
| Logging Tractor Operators | 52 | 2.3 | Logging Tractor Operators | 16 |
| GILA | | | | |
| Supervisors, Nonworking | 211 | 9.2% | Supervisors, Nonworking | 48 |
| Boilermakers | 137 | 6.0 | Boilermakers | 35 |
| Mechanics & Repairers (Exc. Auto.) | 95 | 4.2 | Mechanics & Repairers (Exc. Auto.) | 21 |
| Electricians | 87 | 3.9 | Electricians | 20 |
| Helpers, Trades | 74 | 3.3 | Managers & Officers | 18 |
| GRAHAM & GREENLEE | | | | |
| Helpers, Trades | 104 | 13.4% | Helpers, Trades | 22 |
| Supervisors, Nonworking | 59 | 7.6 | Supervisors, Nonworking | 15 |
| Slab Depiler Operators | 42 | 5.4 | Production Packagers, Hand or Machine | 11 |
| Furnace &/or Heater Operator Helpers | 41 | 5.3 | Slab Depiler Operators | 10 |
| Production Packagers, Hand or Machine | 28 | 3.6 | Furnace &/or Heater Operator Helpers | 10 |

FIGURE 15: LARGEST AND HIGHEST DEMAND OCCUPATIONS IN MANUFACTURING (CONT'D.)

MAY 1980

| LARGEST OCCUPATIONS | ESTIMATED EMPLOYMENT | PCT. OF COUNTY TOTAL | HIGHEST DEMAND OCCUPATIONS 1979-1983 | OPENINGS 1980-1984 |
|---|---|---|---|---|
| MARICOPA | | | | |
| Electrical & Electronic Assemblers | 12,162 | 10.8% | Electrical & Electronic Assemblers | 5,243 |
| Managers & Officers | 8,449 | 7.5 | Managers & Officers | 3,086 |
| Electrical & Electronic Engineers | 4,081 | 3.6 | Electrical & Electronic Engineers | 1,200 |
| Electrical & Electronic Technicians | 3,558 | 3.2 | Secretaries | 1,081 |
| Supervisors, Nonworking | 3,093 | 2.8 | Supervisors, Nonworking | 1,029 |
| MOHAVE | | | | |
| Power-Screwdriver Operators | 208 | 7.1% | Assemblers | 55 |
| Assemblers | 170 | 5.8 | Power-Screwdriver Operators | 54 |
| Engineering Technicians | 125 | 4.3 | Engineering Technicians | 43 |
| Managers & Officers | 116 | 4.0 | Managers & Officers | 37 |
| Filers, Grinders, & Buffers | 103 | 3.5 | Supervisors, Nonworking | 27 |
| NAVAJO | | | | |
| Supervisors, Nonworking | 80 | 5.9% | Supervisors, Nonworking | 24 |
| Truck Drivers | 69 | 5.1 | Truck Drivers | 17 |
| Managers & Officers | 59 | 4.8 | Managers & Officers | 19 |
| Logging Tractor Operators | 50 | 3.7 | Logging Tractor Operators | 13 |
| Chain Offbearers, Lumber | 44 | 3.2 | Chain Offbearers, Lumber | 13 |
| PIMA | | | | |
| Managers & Officers | 1,643 | 7.7% | Electrical & Electronic Assemblers | 1,284 |
| Electrical & Electronic Assemblers | 1,340 | 6.3 | Managers & Officers | 1,197 |
| Other Assemblers | 773 | 3.6 | Electrical & Electronic Engineers | 765 |
| Electrical & Electronic Engineers | 642 | 3.0 | Other Assemblers | 618 |
| Supervisors, Nonworking | 640 | 3.0 | Electro-Mechanic Equipment Assemblers | 602 |
| PINAL | | | | |
| Sewing Machine Operators Regular Equip.-Garment | 180 | 7.0% | Sewing Machine Operators, Regular Equip.-Garment | 35 |
| Supervisors, Nonworking | 121 | 4.7 | Supervisors, Nonworking | 31 |
| Managers & Officers | 103 | 4.0 | Managers & Officers | 30 |
| Helpers, Trades | 69 | 2.7 | Helpers, Trades | 21 |
| Production Packagers, Hand or Machine | 59 | 2.3 | Production Packagers, Hand or Machine | 19 |

FIGURE 15: LARGEST AND HIGHEST DEMAND OCCUPATIONS IN MANUFACTURING (CONT'D.)

| | MAY 1980 | | | |
|---|---|---|---|---|
| LARGEST OCCUPATIONS | ESTIMATED EMPLOYMENT | PCT. OF COUNTY TOTAL | HIGHEST DEMAND OCCUPATIONS 1979-1983 | OPENINGS 1980-1984 |
| SANTA CRUZ | | | | |
| Assemblers | 160 | 14.4% | Assemblers | 73 |
| Managers & Officers | 94 | 8.4 | Managers & Officers | 31 |
| Sewing Machine Operators Regular Equip.-Garment | 83 | 7.5 | Sewing Machine Operators Regular Equip.-Garment | 16 |
| Inspectors | 36 | 3.2 | Secretaries | 8 |
| Supervisors, Nonworking | 34 | 3.1 | Inspectors | 8 |
| YAVAPAI | | | | |
| Managers & Officers | 98 | 7.1% | Managers & Officers | 30 |
| Assemblers | 76 | 5.5 | Assemblers | 26 |
| Supervisors, Nonworking | 59 | 4.3 | Supervisors, Nonworking | 16 |
| Truck Drivers | 52 | 3.8 | Secretaries | 11 |
| Maintenance Repairers, General Utility | 44 | 3.2 | Truck Drivers | 11 |
| YUMA | | | | |
| Sewing Machine Opers. Regular Equip.-Garment | 446 | 28.1% | Sewing Machine Operators Regular Equip.-Garment | 71 |
| Managers & Officers | 111 | 7.0 | Managers & Officers | 59 |
| Delivery & Route Workers | 63 | 4.0 | Engineers | 46 |
| Engineers | 57 | 3.6 | Delivery & Route Workers | 19 |
| Truck Drivers | 52 | 3.3 | General Clerks, Office | 15 |

## OCCUPATIONAL STRUCTURE

The following fourteen tables provide employment estimates and projected employment and job openings for the counties and the State. Graham and Greenlee counties have been combined due to their close proximity, similar economies, and size.

When using the data, please note the following:

1) The data reflect full and part-time wage and salary employment only, and do not include self-employed or unpaid family workers.

2) Total job openings represent the number of openings due to growth of the industry and separations from the labor force. They do not account for labor turnover, i.e., openings created when a worker changes jobs, leaving the job to be filled by someone else. These vacancies are generally the largest source of job openings.

3) To eliminate the possible disclosure of confidential employer information, occupations have been added to the appropriate "All Other" or residual category if: less than three firms reported a single occupation; one firm reported more than 50 percent of the occupational estimate; two firms combined reported more than 75 percent of the occupational estimate.

4) The projection technique does not possess the degree of accuracy that may be implied by small employment and demand figures.

5) Data for occupations with employment of less than five are included in the appropriate "All Other" categories. These occupations are not listed, however, in the summary of "All Other" categories which follows each table.

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE

| | Estimated 1980 Employment | Percent of Total 1984 Employment | Projected 1984 Employment | Total Job Openings 1980-1984 |
|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 11,023 | 7.2 | 13,995 | 4,594 |
| TOTAL PROFESSIONAL WORKERS | 17,272 | 11.3 | 22,951 | 7,301 |
| Aeronautical Engineers | 1,589 | 1.0 | 2,172 | 693 |
| Chemical Engineers | 96 | .1 | 113 | 24 |
| Civil Engineers | 39 | .0 | 50 | 17 |
| Electrical & Electronic Engineers | 4,757 | 3.1 | 6,429 | 2,000 |
| Industrial Engineers | 1,564 | 1.0 | 2,246 | 823 |
| Mechanical Engineers | 922 | .6 | 1,123 | 264 |
| Metal Engineers | 105 | .1 | 130 | 30 |
| Safety Engineers | 12 | .0 | 13 | 2 |
| Ceramic Engineers | 5 | .0 | 6 | 2 |
| All Other Engineers | 1,050 | .7 | 1,407 | 442 |
| Statisticians | 25 | .0 | 33 | 11 |
| All Other Mathematical Scientists | 34 | .0 | 47 | 21 |
| Chemists | 213 | .1 | 263 | 76 |
| Agricultural Scientists | 15 | .0 | 21 | 8 |
| Biological Scientists | 25 | .0 | 30 | 8 |
| All Other Natural Scientists | 23 | .0 | 28 | 5 |
| Systems Analysts, EDP | 135 | .1 | 148 | 19 |
| Systems Analysts, Business | 165 | .1 | 216 | 59 |
| Systems Analysts, Scientific & Technical | 730 | .5 | 962 | 270 |
| Photographers | 79 | .1 | 93 | 22 |
| Purchasing Agents &/or Buyers | 1,013 | .6 | 1,326 | 317 |
| Accountants & Auditors | 1,016 | .7 | 1,297 | 445 |
| Commercial Artists | 259 | .2 | 326 | 118 |
| Cost Estimators | 117 | .1 | 147 | 58 |
| Writers &/or Editors | 678 | .4 | 833 | 283 |
| Lawyers | 17 | .0 | 22 | 7 |
| Librarians, Professional | 19 | .0 | 22 | 7 |
| Nurses, Professional | 111 | .1 | 137 | 49 |
| Personnel & Labor Relations Specialists | 471 | .3 | 614 | 205 |
| Reporters &/or Correspondents | 422 | .3 | 494 | 150 |
| Designers | 314 | .2 | 434 | 150 |
| Estimators, Printing Services | 25 | .0 | 30 | 10 |
| Contract Administrators | 123 | .1 | 156 | 49 |
| All Other Professional Workers | 1,104 | .7 | 1,583 | 657 |
| TOTAL TECHNICAL WORKERS | 8,826 | 5.8 | 11,692 | 3,463 |
| Computer Programmers | 1,060 | .7 | 1,600 | 598 |
| Engineering Technicians | 11 | .0 | 12 | 2 |
| Drafters | 1,081 | .7 | 1,371 | 382 |
| Electrical & Electronic Technicians | 4,071 | 2.7 | 5,210 | 1,378 |
| Radiographers | 5 | .0 | 6 | 1 |
| Mechanical Engineering Technicians | 985 | .6 | 1,275 | 324 |
| Tool Programmers, Numerical Control | 89 | .1 | 115 | 32 |
| Spectroscopists | 6 | .0 | 7 | 1 |
| Industrial Engineering Technicians | 109 | .1 | 135 | 39 |
| All Other Engineering Technicians | 765 | .5 | 1,155 | 479 |
| All Science Technicians | 429 | .3 | 542 | 155 |
| Timber Cruisers | 14 | .0 | 17 | 4 |
| All Other Technicians | 201 | .1 | 247 | 68 |
| TOTAL SERVICE WORKERS | 2,272 | 1.5 | 2,820 | 884 |
| Janitors, Porters, & Cleaners | 1,265 | .8 | 1,545 | 506 |
| Guards & Doorkeepers | 579 | .4 | 719 | 174 |
| Food Service Workers (Exc. Cashiers) | 238 | .2 | 301 | 108 |
| Supervisors, Nonworking - Service | 101 | .1 | 126 | 36 |
| All Other Service Workers | 89 | .1 | 129 | 60 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE (CONT'D.)

| | Estimated 1980 Employment | Percent of Total 1984 Employment | Projected 1984 Employment | Total Job Openings 1980-1984 |
|---|---|---|---|---|
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 91,143 | 59.7 | 111,921 | 32,467 |
| Mechanics, Aircraft | 220 | .1 | 308 | 100 |
| Mechanics, Automotive | 596 | .4 | 726 | 176 |
| Electric Motor Repairers | 24 | .0 | 34 | 12 |
| Electric Instrument Repairers | 13 | .0 | 16 | 4 |
| Engineering Equipment Mechanics | 69 | .0 | 85 | 20 |
| Mechanics, Maintenance | 855 | .6 | 1,038 | 257 |
| Refrigeration/Air Conditioning Mechanics | 51 | .0 | 62 | 14 |
| Coin/Vending Machine Servicers | 81 | .1 | 86 | 12 |
| Mechanics, Sewing Machine | 56 | .0 | 60 | 10 |
| All Other Mechanics & Repairers | 480 | .3 | 593 | 140 |
| Developers &/or Projection Printers | 9 | .0 | 11 | 3 |
| Pressers, Hand (Textiles) | 75 | .0 | 82 | 25 |
| Pressers, Machine (Textiles, Exc. Laundry) | 41 | .0 | 43 | 9 |
| Truck Drivers | 2,774 | 1.8 | 3,344 | 761 |
| Blacksmiths | 15 | .0 | 17 | 4 |
| Boilermakers | 250 | .2 | 288 | 67 |
| Brakers, Train | 10 | .0 | 11 | 2 |
| Cabinetmakers | 416 | .3 | 512 | 130 |
| Carpenters | 393 | .3 | 500 | 156 |
| Concrete Rubbers | 10 | .0 | 12 | 3 |
| Cooks &/or Cookers | 45 | .0 | 47 | 9 |
| Crane, Derrick, & Hoist Operators | 276 | .2 | 322 | 71 |
| Delivery & Route Workers | 1,900 | 1.2 | 2,114 | 337 |
| Machine Drillers | 13 | .0 | 15 | 4 |
| Extractor &/or Extractor Plant Operators | 21 | .0 | 21 | 3 |
| Electricians | 667 | .4 | 809 | 204 |
| Filers, Grinders, & Buffers (Exc. Lens) | 792 | .5 | 971 | 240 |
| Supervisors, Nonworking | 4,610 | 3.0 | 5,668 | 1,555 |
| Gear Cutting &/or Grinding Machine Opers. | 154 | .1 | 203 | 66 |
| Glaziers | 47 | .0 | 59 | 15 |
| Heavy Equipment Operators | 217 | .1 | 262 | 62 |
| Riggers | 20 | .0 | 25 | 7 |
| Industrial Truck Operators | 1,120 | .7 | 1,354 | 302 |
| Inspectors | 3,118 | 2.0 | 4,031 | 1,354 |
| Instrument Repairers | 381 | .2 | 474 | 127 |
| Instructors, Apparel & Textile Machines | 27 | .0 | 30 | 5 |
| Jewelers &/or Silversmiths | 55 | .0 | 66 | 21 |
| Laminating - Machine Operators, Furniture | 37 | .0 | 43 | 11 |
| Lens Grinders (Exc. Ophthalmic Lens Grinders) | 73 | .0 | 82 | 21 |
| Loaders, Tank Cars &/or Trucks | 33 | .0 | 43 | 13 |
| Machinists | 2,083 | 1.4 | 2,697 | 822 |
| Mattress Makers | 67 | .0 | 73 | 16 |
| Maintenance Repairers, General Utility | 1,305 | .9 | 1,586 | 396 |
| Helpers, Trades | 1,257 | .8 | 1,519 | 399 |
| Metal Fabricators (Exc. Sheet Metal Wkrs.) | 169 | .1 | 190 | 34 |
| Mixers | 117 | .1 | 123 | 18 |
| Millwrights | 78 | .1 | 98 | 30 |
| Oilers | 192 | .1 | 233 | 61 |
| Order Fillers | 769 | .5 | 939 | 213 |
| Oven Operators | 32 | .0 | 33 | 4 |
| Painters, Maintenance | 91 | .1 | 112 | 33 |
| Panelboard Operators | 36 | .0 | 44 | 12 |
| Pourers, Metal | 73 | .0 | 82 | 15 |
| Electroplaters | 477 | .3 | 609 | 183 |
| Plumbers &/or Pipefitters | 274 | .2 | 329 | 81 |
| Press Operators &/or Plate Printers | 83 | .1 | 98 | 21 |
| Production Packagers, Hand or Machine | 1,419 | .9 | 1,611 | 407 |
| Refractory Materials Repairers | 53 | .0 | 61 | 12 |
| Roll Forming Machine Operators | 6 | .0 | 8 | 3 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE (CONT'D.)

| | Estimated 1980 Employment | Percent of Total 1984 Employment | Projected 1984 Employment | Total Job Openings 1980-1984 |
|---|---|---|---|---|
| Sandblasters &/or Shotblasters | 38 | .0 | 44 | 11 |
| Sewing Mach. Opers., Regular Equip.-Garment | 2,038 | 1.3 | 2,202 | 425 |
| Sewing Mach. Opers., Special Equip.-Garment | 843 | .6 | 906 | 171 |
| Sewing Mach. Opers., Reg. Equip.-Nongarment | 360 | .2 | 410 | 96 |
| Sewing Mach. Opers., Spec. &/or Auto Equip. Nongarment | 133 | .1 | 145 | 29 |
| Sheet Metal Workers | 979 | .6 | 1,254 | 339 |
| Stationary Boiler Firers | 49 | .0 | 59 | 15 |
| Stationary Engineers | 93 | .1 | 107 | 24 |
| Structural - Steel Workers | 195 | .1 | 250 | 69 |
| Skivers | 32 | .0 | 35 | 7 |
| Tool & Diemakers | 700 | .5 | 928 | 335 |
| Logging Tractor Operators | 127 | .1 | 155 | 36 |
| Welders & Flamecutters | 1,697 | 1.1 | 2,157 | 648 |
| Offset Lithographic Press Operators | 741 | .5 | 874 | 247 |
| Platemakers | 95 | .1 | 112 | 33 |
| Strippers (Printing & Publishing) | 170 | .1 | 202 | 41 |
| Camera Operators, Printing | 237 | .2 | 280 | 55 |
| Strike-on-Machine Operators | 27 | .0 | 32 | 12 |
| Photolettering Machine Operators | 9 | .0 | 11 | 3 |
| Opticians, Dispensing &/or Optical Mechs. | 38 | .0 | 43 | 11 |
| Drier Operators (Food & Kindred) | 16 | .0 | 19 | 4 |
| Trimmers, Machine | 29 | .0 | 33 | 8 |
| Back Tenders (Paper Products) | 13 | .0 | 16 | 5 |
| Bakers | 71 | .0 | 78 | 18 |
| Baker Helpers | 30 | .0 | 30 | 5 |
| Power-Barker Operators | 22 | .0 | 27 | 9 |
| Beaters (Paper Products) | 6 | .0 | 7 | 2 |
| Bench Hands, Jewelry | 15 | .0 | 16 | 3 |
| Blockmaking-Machine Operators | 135 | .1 | 162 | 44 |
| Boners, Meat | 70 | .0 | 71 | 8 |
| Boring-Machine Operators, Wood | 7 | .0 | 9 | 3 |
| Brick & Tile Making Machine Operators | 85 | .1 | 105 | 32 |
| Bundlers (Textiles & Textile Prods.) | 77 | .1 | 83 | 13 |
| Butchers, All-Around | 98 | .1 | 103 | 14 |
| Cage Makers, Hand or Machine | 22 | .0 | 27 | 8 |
| Carcass Splitters | 32 | .0 | 33 | 4 |
| Casters, Pottery & Porcelain | 13 | .0 | 16 | 4 |
| Casters, Finished or Semi-finished Prods. | 11 | .0 | 12 | 3 |
| Casters, Ingots & Pigs | 12 | .0 | 14 | 3 |
| Chain Offbearers, Lumber | 124 | .1 | 153 | 43 |
| Chasers, Lumber | 7 | .0 | 9 | 2 |
| Cheesemakers | 10 | .0 | 10 | 1 |
| Cheesemaker Helpers | 11 | .0 | 11 | 1 |
| Chemical Operators - A | 17 | .0 | 20 | 5 |
| Chemical Operators - B | 31 | .0 | 38 | 11 |
| Chemical Operator Helpers | 26 | .0 | 30 | 7 |
| Chippers, Lumber | 23 | .0 | 28 | 8 |
| Choker Setters, Lumber | 21 | .0 | 26 | 7 |
| Coater Operators, Off-Machine | 9 | .0 | 11 | 3 |
| Coating Mixer Tenders (Paper Products) | 6 | .0 | 7 | 2 |
| Coilers, Winders &/or Spoolers | 247 | .2 | 270 | 50 |
| Concrete Pipe Makers | 53 | .0 | 65 | 17 |
| Concrete Stone Fabricators | 28 | .0 | 34 | 9 |
| Cooler Room Workers, Meat | 44 | .0 | 47 | 8 |
| Coremakers, Hand, Bench &/or Floor | 36 | .0 | 40 | 8 |
| Coremakers, Machine | 12 | .0 | 14 | 3 |
| Corrugator Operators | 19 | .0 | 22 | 5 |
| Cut-Off Saw Operators, Lumber | 97 | .1 | 117 | 33 |
| Cut-Off Sawyers, Log | 16 | .0 | 20 | 5 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE (CONT'D.)

| | Estimated 1980 Employment | Percent of Total 1984 Employment | Projected 1984 Employment | Total Job Openings 1980-1984 |
|---|---|---|---|---|
| Cutters, Portable Machine | 44 | .0 | 48 | 10 |
| Cutting & Creasing Press Operators | 10 | .0 | 11 | 3 |
| Cylinder-Machine Tenders (Paper Products) | 11 | .0 | 14 | 4 |
| Dado Operators | 11 | .0 | 14 | 5 |
| Dairy Processing Equipment Operators | 177 | .1 | 179 | 24 |
| Die Cutters &/or Clicking-Machine Opers. | 68 | .0 | 76 | 16 |
| Die Sinkers | 6 | .0 | 7 | 2 |
| Digester Operators (Paper Products) | 6 | .0 | 7 | 2 |
| Digester Operator Helpers (Paper Products) | 5 | .0 | 6 | 2 |
| Dividing &/or Dough-Brake Mach. Opers. | 43 | .0 | 43 | 7 |
| Drill-Press &/or Boring Machine Operators | 606 | .4 | 784 | 245 |
| Dust Opers. &/or Ore Crushing Dust Collectors | 32 | .0 | 36 | 9 |
| Edgers, Automatic &/or Pony | 21 | .0 | 26 | 7 |
| Etchers &/or Engravers | 46 | .0 | 59 | 19 |
| Evaporator Operators, Papermaking | 5 | .0 | 6 | 2 |
| Insulating Extruding &/or Lead Press Opers. | 287 | .2 | 314 | 63 |
| Extrusion Press Opers., Hot Billets | 74 | .0 | 81 | 17 |
| Fabricators, Plastics | 106 | .1 | 124 | 30 |
| Fallers &/or Buckers, Logging | 102 | .1 | 125 | 35 |
| Feed Pellet Mill Operators | 7 | .0 | 7 | 2 |
| Finishers, Hand (Plastics) | 40 | .0 | 45 | 12 |
| Finishers, Machine (Plastics) | 5 | .0 | 6 | 1 |
| Finishers, Pottery & Porcelain | 26 | .0 | 32 | 10 |
| Flavor-Room Workers &/or Freezer Opers. | 33 | .0 | 33 | 5 |
| Flexo-Folder-Gluer Operators | 23 | .0 | 26 | 7 |
| Fourdrinier-Machine Tenders | 18 | .0 | 22 | 7 |
| Fusing Machine Operators | 181 | .1 | 199 | 41 |
| Gang Sawyers | 12 | .0 | 15 | 4 |
| Garment Repairers | 36 | .0 | 40 | 12 |
| Gem Cutters | 52 | .0 | 56 | 9 |
| Grain Receivers | 6 | .0 | 6 | 1 |
| Grinding &/or Abrading Machine Opers., Metal | 733 | .5 | 983 | 346 |
| Head Loaders (Lumber) | 13 | .0 | 16 | 4 |
| Head Sawyers | 24 | .0 | 29 | 8 |
| Heat Treaters, Annealers, &/or Temperers | 87 | .1 | 106 | 31 |
| Ingredient Scalers (Baking) | 11 | .0 | 11 | 1 |
| Lay-out Markers, Wood | 11 | .0 | 14 | 5 |
| Kiln Operators | 16 | .0 | 20 | 5 |
| Lathe Operators, Wood | 9 | .0 | 11 | 4 |
| Lathe &/or Turning Machine Operators, Metal | 1,142 | .7 | 1,541 | 549 |
| Layboy Tenders | 10 | .0 | 12 | 3 |
| Lay-Out Markers, Metal | 187 | .1 | 228 | 63 |
| Loaders, Car & Truck (Lumber) | 41 | .0 | 52 | 14 |
| Loader Engineers (Lumber) | 13 | .0 | 16 | 4 |
| Log Handling Equipment Operators | 38 | .0 | 47 | 13 |
| Log Inspectors, Graders, &/or Scalers | 29 | .0 | 35 | 9 |
| Lumber Graders | 16 | .0 | 20 | 5 |
| Lumber Straighteners | 13 | .0 | 16 | 5 |
| Machine Setters, Woodworking | 13 | .0 | 15 | 4 |
| Machine Setters, Paper Goods | 17 | .0 | 19 | 5 |
| Machine Tool Operators, Combination | 1,273 | .8 | 1,592 | 485 |
| Machine Tool Operators, Numerical-Control | 553 | .4 | 753 | 272 |
| Machine Tool Operators, Toolroom | 155 | .1 | 210 | 70 |
| Machine Tool Setters, Metalworking | 243 | .2 | 321 | 100 |
| Meat Grinders | 13 | .0 | 13 | 2 |
| Millers (Food & Kindred) | 76 | .1 | 89 | 16 |
| Milling &/or Planing Machine Operators | 470 | .3 | 627 | 219 |
| Rubber-Mill Operators | 8 | .0 | 9 | 2 |
| Wood Machinists | 183 | .1 | 233 | 70 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE (CONT'D.)

| | Estimated 1980 Employment | Percent of Total 1984 Employment | Projected 1984 Employment | Total Job Openings 1980-1984 |
|---|---|---|---|---|
| Molders, Bench &/or Floor | 59 | .0 | 67 | 14 |
| Molders, Machine (Exc. Wax Molders) | 70 | .0 | 81 | 19 |
| Nailing-Machine Operators | 51 | .0 | 64 | 18 |
| Off-Bearers | 24 | .0 | 30 | 9 |
| Paper-Reel &/or Rewinder Operators | 18 | .0 | 22 | 6 |
| Pattern Cutters | 27 | .0 | 29 | 5 |
| Patternmakers, Metal | 14 | .0 | 17 | 6 |
| Patternmakers, Wood | 26 | .0 | 29 | 7 |
| Plastic-Top Installers | 57 | .0 | 64 | 12 |
| Plater Helpers | 223 | .1 | 283 | 84 |
| Power-Screwdriver Operators | 226 | .1 | 262 | 61 |
| Pump Operators, By-Products | 7 | .0 | 8 | 2 |
| Recovery Operators, Papermaking | 23 | .0 | 28 | 8 |
| Resawyers | 32 | .0 | 39 | 11 |
| Ripsaw Operators | 73 | .0 | 85 | 20 |
| Rolling-Machine Operators | 10 | .0 | 10 | 1 |
| Rubbers | 11 | .0 | 13 | 4 |
| Rubber Goods Cutters & Finishers | 20 | .0 | 22 | 5 |
| Saddle Makers | 7 | .0 | 8 | 2 |
| Sample Makers (Garments) | 14 | .0 | 15 | 3 |
| Samplers &/or Test Preparers (Mining) | 29 | .0 | 35 | 9 |
| Sanders, Wood | 116 | .1 | 137 | 34 |
| Saw Filers | 19 | .0 | 23 | 7 |
| Sawyers, Metal | 62 | .0 | 78 | 22 |
| Screener Operators | 19 | .0 | 23 | 6 |
| Second Cutters, Hand (Glass) | 7 | .0 | 9 | 2 |
| Second Loaders, (Lumber) | 6 | .0 | 7 | 2 |
| Setters &/or Drawers | 26 | .0 | 32 | 9 |
| Shoe Parts Sewers, Hand | 11 | .0 | 12 | 2 |
| Shakeout Workers, Foundry | 42 | .0 | 47 | 10 |
| Shapers & Pressers (Garments) | 9 | .0 | 10 | 2 |
| Shapers &/or Router Operators | 14 | .0 | 19 | 6 |
| Skin Peeling Machine Operators | 5 | .0 | 5 | 1 |
| Skinners, Animal | 50 | .0 | 51 | 7 |
| Slab Depiler Operators | 42 | .0 | 48 | 10 |
| Slitting-Machine Operators | 24 | .0 | 27 | 6 |
| Slotter Operators | 8 | .0 | 9 | 2 |
| Spot Cleaners | 10 | .0 | 11 | 2 |
| Spreaders (Textiles & Textile Prods.) | 75 | .0 | 81 | 14 |
| Springers | 15 | .0 | 16 | 4 |
| Kiln Stocker Operators | 32 | .0 | 39 | 11 |
| Steel Pourer Helpers | 28 | .0 | 31 | 6 |
| Stitchers, Utility | 8 | .0 | 9 | 1 |
| Stone Setters | 9 | .0 | 10 | 2 |
| Strippers (Rubber & Rubber Prods.) | 55 | .0 | 60 | 11 |
| Stunners | 37 | .0 | 38 | 5 |
| Supercalender Operators | 7 | .0 | 9 | 2 |
| Taping-Machine Operators | 6 | .0 | 7 | 2 |
| Tenoner Operators | 12 | .0 | 14 | 3 |
| Testers | 1,582 | 1.0 | 2,067 | 660 |
| Thread Trimmers | 60 | .0 | 65 | 12 |
| Trim Saw Operators | 72 | .0 | 91 | 26 |
| Upholstery Trimmers | 20 | .0 | 22 | 5 |
| Variety Saw Operators | 22 | .0 | 26 | 7 |
| Wax Pattern Workers | 160 | .1 | 174 | 32 |
| Wet-Machine Tenders | 7 | .0 | 9 | 2 |
| Winders, Paper Machine | 12 | .0 | 15 | 4 |
| Woodworking-Machine Operators | 144 | .1 | 179 | 54 |
| Work Distributors (Garments) | 83 | .1 | 90 | 15 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE (CONT'D.)

| | Estimated 1980 Employment | Percent of Total 1984 Employment | Projected 1984 Employment | Total Job Openings 1980-1984 |
|---|---|---|---|---|
| Press Tenders, Rubber Goods | 71 | .0 | 80 | 16 |
| Press Operators (Brick, Tile, & Clay) | 6 | .0 | 7 | 2 |
| Painters, Production | 501 | .3 | 622 | 176 |
| Die-Casting Machine Operators & Setters | 66 | .0 | 76 | 18 |
| Wirers, Electronic | 219 | .1 | 277 | 82 |
| Impregnators, Electronic | 5 | .0 | 7 | 2 |
| Riveters, Heavy | 5 | .0 | 6 | 1 |
| Riveters, Light | 32 | .0 | 41 | 12 |
| Punch-Press Operators, Metal | 463 | .3 | 571 | 158 |
| Punch-Press Setters, Metal | 67 | .0 | 85 | 24 |
| Shear &/or Slitter Operators, Metal | 150 | .1 | 191 | 56 |
| Shear &/or Slitter Setters | 35 | .0 | 45 | 12 |
| Coil Winders | 379 | .2 | 466 | 129 |
| Coil Tapers, Hand or Machine | 23 | .0 | 28 | 8 |
| Encapsulators | 754 | .5 | 947 | 275 |
| Compression &/or Injection Molding Machine Operators, Plastics | 479 | .3 | 560 | 133 |
| Coil Finishers | 178 | .1 | 229 | 69 |
| Brown-Stock Washers &/or Blow Pit Operators | 6 | .0 | 7 | 2 |
| Fourth &/or Fifth Hands, Paper Machine | 9 | .0 | 11 | 3 |
| Mixers, Stone, Clay, Glass, & Related Products | 23 | .0 | 28 | 3 |
| Dip Platers, Non-Electrolytic | 71 | .0 | 92 | 28 |
| Furnace Operators &/or Cupola Tenders | 138 | .1 | 159 | 37 |
| Cutting Machine Operators, Food | 65 | .0 | 70 | 13 |
| Setters, Plastic Molding Machine | 75 | .0 | 85 | 17 |
| Fitters, Structural Metal | 208 | .1 | 262 | 76 |
| Wire Weavers | 23 | .0 | 29 | 9 |
| Upholsterers | 89 | .1 | 98 | 22 |
| Upholstery Cutters | 23 | .0 | 26 | 6 |
| Cannery Workers | 104 | .1 | 108 | 15 |
| Furnace Chargers | 58 | .0 | 66 | 13 |
| Furnace &/or Heater Operator Helpers | 97 | .1 | 109 | 22 |
| Insulation Wrapping or Braiding Mach. Opers. | 44 | .0 | 49 | 10 |
| Chief Operators | 19 | .0 | 25 | 8 |
| Scrap Sorters | 61 | .0 | 73 | 18 |
| Markers | 8 | .0 | 9 | 1 |
| Cutters, Hand | 43 | .0 | 46 | 8 |
| Turners (Textile Products) | 33 | .0 | 36 | 7 |
| Folders, Hand (Textiles & Textile Prods.) | 143 | .1 | 157 | 29 |
| Power Brake &/or Bending Mach. Opers.-Metal | 217 | .1 | 272 | 83 |
| Planer Operators | 79 | .1 | 98 | 27 |
| Soabar Operators | 6 | .0 | 6 | 1 |
| Mill &/or Grinder Operators, Minerals | 93 | .1 | 109 | 22 |
| Copy Markers | 14 | .0 | 17 | 4 |
| Copy Cutters | 8 | .0 | 9 | 3 |
| Hand Compositors | 86 | .1 | 101 | 27 |
| Imposers & Makeup Arrangers | 32 | .0 | 38 | 11 |
| Linecasting-Machine Operators | 45 | .0 | 53 | 14 |
| Linecasting-Machine Keyboard Opers. | 19 | .0 | 22 | 8 |
| Linecasting-Machine Tenders | 18 | .0 | 21 | 6 |
| Monotype-Keyboard Operators | 8 | .0 | 10 | 4 |
| Pasteup Men/Women | 309 | .2 | 365 | 89 |
| Phototypesetting-Mach. Keyboard Opers. | 60 | .0 | 70 | 24 |
| Phototypesetting-Mach. Monitors | 22 | .0 | 26 | 8 |
| Phototypesetter Operators | 135 | .1 | 158 | 43 |
| Proofreaders, Composed Copy | 117 | .1 | 138 | 46 |
| Retouchers (Artist) | 13 | .0 | 15 | 4 |
| Photoengravers | 20 | .0 | 24 | 5 |
| Letter Press Opers. Sheet, Roll, or Web Fed | 312 | .2 | 371 | 83 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE (CONT'D.)

| | Estimated 1980 Employment | Percent of Total 1984 Employment | Projected 1984 Employment | Total Job Openings 1980-1984 |
|---|---|---|---|---|
| Steel Die Press Operators | 24 | .0 | 29 | 7 |
| Press Assistants & Feeders | 208 | .1 | 247 | 62 |
| Setters, Bindery Machines | 44 | .0 | 53 | 14 |
| Mailers | 237 | .1 | 281 | 84 |
| Water Treatment Plant Operators, Smelting | 6 | .0 | 7 | 1 |
| Weighers, Production | 17 | .0 | 19 | 4 |
| Food Shapers, Hand | 68 | .0 | 69 | 13 |
| Depositors, Food | 8 | .0 | 8 | 9 |
| Washers &/or Separators, Food | 71 | .0 | 76 | 15 |
| Equipment Cleaners, Hand | 68 | .0 | 69 | 23 |
| Sorter Operators, Green Lumber | 17 | .0 | 21 | 7 |
| Sawyers, Tail | 18 | .0 | 22 | 6 |
| Gluers &/or Cementers, Hand | 33 | .0 | 40 | 15 |
| Cutters, Machine (Leather, Paper, & Textiles) | 59 | .0 | 67 | 15 |
| Screen or Stencil Printers &/or Setters (Printing) | 102 | .1 | 125 | 45 |
| Screen Cutters &/or Makers, Non-Photographic | 14 | .0 | 17 | 6 |
| Screen Makers, Photographic Process | 13 | .0 | 16 | 3 |
| Bookbinders, Hand | 66 | .0 | 79 | 25 |
| Bookbinders, Machine | 205 | .1 | 244 | 78 |
| Bindery Workers, Assembly | 210 | .1 | 250 | 59 |
| Bindery Workers, Stitching | 44 | .0 | 52 | 12 |
| All Other Bindery Workers | 206 | .1 | 246 | 59 |
| Cushion Makers | 13 | .0 | 14 | 3 |
| Grinder Opers., Chem., Plastics, & Related | 29 | .0 | 35 | 8 |
| Extruder Opers., Plastics or Rubber | 110 | .1 | 123 | 27 |
| Extruder Oper. Helpers, Plastics or Rubber | 63 | .0 | 71 | 15 |
| Pipe & Tank Liners | 6 | .0 | 7 | 2 |
| Tappers, Metal | 21 | .0 | 25 | 7 |
| Pump Operators | 64 | .0 | 73 | 17 |
| Sand Cutters, Mixers, &/or Slingers | 29 | .0 | 32 | 5 |
| Assemblers | 2,119 | 1.4 | 2,515 | 785 |
| Machine Assemblers | 799 | .5 | 1,076 | 346 |
| Instrument Makers &/or Assemblers | 51 | .0 | 62 | 20 |
| Electro-Mechanical Equipment Assemblers | 1,268 | .8 | 1,968 | 942 |
| Electrical & Electronic Assemblers | 13,796 | 9.0 | 17,727 | 6,497 |
| All Other Assemblers | 1,854 | 1.2 | 2,581 | 1,080 |
| Model &/or Mold Makers | 10 | .0 | 12 | 3 |
| Furnace, Kiln, Drier, or Oven Opers./Tenders | 94 | .1 | 112 | 29 |
| Batch Plant Operators, Concrete | 81 | .1 | 98 | 25 |
| Clay Makers | 5 | .0 | 6 | 2 |
| Mixers &/or Blenders, Chemicals & Chem. Prods. | 303 | .2 | 382 | 112 |
| Laminators, Preforms | 84 | .1 | 101 | 26 |
| All Other Skilled Craft Workers | 1,832 | 1.2 | 2,179 | 611 |
| All Other Semiskilled Workers | 4,880 | 3.2 | 5,178 | 1,252 |
| All Other Laborers & Unskilled Workers | 5,417 | 3.6 | 6,554 | 1,699 |
| TOTAL CLERICAL WORKERS | 18,845 | 12.4 | 24,037 | 8,773 |
| Addressing Machine Operators | 9 | .0 | 10 | 4 |
| Bookkeeping &/or Billing Machine Opers. | 69 | .0 | 83 | 27 |
| Computer Operators | 550 | .4 | 744 | 257 |
| Keypunch Operators | 388 | .3 | 483 | 181 |
| Peripheral EDP Equipment Operators | 139 | .1 | 177 | 73 |
| Inserting &/or Labeling Machine Operators | 21 | .0 | 24 | 9 |
| All Other Office Machine Operators | 188 | .1 | 242 | 108 |
| Stenographers | 121 | .1 | 152 | 58 |
| Accounting Clerks | 1,029 | .7 | 1,293 | 472 |
| Bookkeepers, Hand | 749 | .5 | 912 | 314 |
| Cashiers | 45 | .0 | 48 | 12 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE (CONT'D.)

| | Estimated 1980 Employment | Percent of Total 1984 Employment | Projected 1984 Employment | Total Job Openings 1980-1984 |
|---|---|---|---|---|
| File Clerks | 210 | .1 | 269 | 119 |
| General Clerks, Office | 2,508 | 1.6 | 3,230 | 1,284 |
| Order Clerks | 275 | .2 | 336 | 119 |
| Payroll &/or Timekeeping Clerks | 303 | .2 | 360 | 112 |
| Personnel Clerks | 235 | .2 | 290 | 121 |
| Procurement Clerks | 196 | .1 | 250 | 77 |
| Receptionists | 176 | .1 | 216 | 88 |
| Secretaries | 2,850 | 1.9 | 3,637 | 1,463 |
| Statistical Clerks | 228 | .1 | 288 | 111 |
| Switchboard Operators | 82 | .1 | 101 | 41 |
| Switchboard Operators/Receptionists | 213 | .1 | 260 | 104 |
| Messengers | 31 | .0 | 37 | 10 |
| Typists (Including Clerk-Typists) | 669 | .4 | 816 | 324 |
| Clerical Supervisors, Office or Plant | 400 | .3 | 496 | 145 |
| Circulation Clerks | 191 | .1 | 228 | 78 |
| Classified-Ad Clerks, Newspaper | 49 | .0 | 58 | 19 |
| Customer Service Reps., Print. & Publish. | 105 | .1 | 123 | 41 |
| Telephone Ad-Takers, Newspaper | 210 | .1 | 248 | 83 |
| All Other Office Clerical Workers | 885 | .6 | 1,180 | 495 |
| Production Clerks &/or Coordinators | 1,618 | 1.1 | 2,148 | 714 |
| Shipping Packers | 901 | .6 | 1,102 | 305 |
| Shipping &/or Receiving Clerks | 827 | .5 | 1,014 | 262 |
| Weighers, Record Keeping | 42 | .0 | 47 | 10 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 1,721 | 1.1 | 2,284 | 765 |
| Dispatchers, Vehicle, Service or Work | 107 | .1 | 130 | 36 |
| Tally Clerks, Sawmill | 10 | .0 | 12 | 4 |
| Shade-Ticket Markers | 9 | .0 | 10 | 3 |
| All Other Plant Clerical Workers | 486 | .3 | 699 | 325 |
| TOTAL SALES WORKERS | 3,183 | 2.1 | 3,800 | 1,027 |
| Sales Reps., Agents, &/or Associates | 2,857 | 1.9 | 3,428 | 939 |
| Sales Clerks (Exc. Cashiers) | 286 | .2 | 325 | 75 |
| All Other Sales Workers | 40 | .0 | 47 | 13 |
| TOTAL ALL OCCUPATIONS | 152,564 | 100.0 | 191,216 | 58,509 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Other Mathematical Scientists
Mathematical Scientists
Mathematicians

All Other Natural Scientists
Physicists

MAINTENANCE & PRODUCTION WORKERS

All Other Mechanics & Repairers
Data Processing Machine Repairers

All Other Assemblers
Aircraft Structure and Surfaces Assemblers, Class B

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Other Skilled Craft Workers
Compositors & Typesetters
Asphalt Blenders
Asphalt Plant Operators
Die Polishers, Wire &/or Tubes
Die Setters
Dispatchers, Refinery
Fireworks Makers
Forging Press Operators
Glass Blowers
Header Operators
Hose Makers
Lasting-Machine Operators, Hand Method
Luggage Makers

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

STATEWIDE (CONT'D.)

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

Molders, Pattern
Patternmakers, Plastics
Printer-Slotter Operators
Refinery Operators
Stone Cutters, Hand
Sugar Boilers
Clay Turners
Wire Drawers
Yarder Engineers
Stereotypers
Flexographic Press Operators
Gravure Press Operators
Rolling Mill Operators &/or Attendants
Tinters

All Other Semiskilled Workers
Bias Machine Operators
Bleacher Operators, Pulp
Splitters, Stone
Sorters (Brick & Tile)
Metal Heaters
Curers, Rubber Goods
Draw Bench Operators &/or Tube Drawers
Dry Curers
Envelope Machine Operators
Filling-Machine Operators
Gluing-Machine Operators
Icemakers
Kiln Transfer Operators
Leather Workers
Picklers, Continuous Pickling Line
Pot Tenders, Smelting
Pressers &/or Expeller Operators (Food & Kindred)
Pump Operators, By Products
Sawyers, Plastics
Setters, Molding & Coremaking Machine
Side Lasters (Shoes)
Smokers
Spray Machine Operators (Ceramics)
Stickers, Slaughterhouse
Stitchers, Standard Machine
Stranding Machine Operators
Stretcher-Leveler Operators
Vulcanizers, Rubber Plate
Balancing-Machine Operators
Conveyor Opers. or Tenders (Exc. Feeders & Loaders)
Core Feeders (Wood Products)
Loading-Machine Operators (Ammunition)
Farm Equipment Operators
Linter-Machine Tenders
Drier Operators, Chem., Plastic Resins, & Rubber
Concrete Vault Makers
Casket Coverers &/or Liners (Ex. Makers)
Cementers, Pasters, Backers, or Fitters, Hand (Shoes)
Ink Workers
Mold Closers, Core &/or Weight & Jacket Setters
Embossing, Stamping, &/or Marking Machine Operators
Calender Operators, Plastics or Rubber
Rolling Mill Operator Helpers, Rough or Finished
Decorators, Hand
Blow-Molding Machine Operators
Press Operators, Plastics
Vacuum Plastic Forming Machine Operators

All Other Laborers & Unskilled Workers
Casing Finishers &/or Stuffers
Hose Loaders
Molders, Machine (Pharmaceuticals)
Novelty Workers (Food & Kindred)
Power-Press Tenders
Pulpers
Wrapping-Machine Operators
Bailing-Machine Operators
Precipitator Operators
Calender Operator Helpers, Plastics or Rubber

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

APACHE COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 20 | 23 | 3 | 3 | 6 |
| TOTAL PROFESSIONAL WORKERS | 15 | 16 | 1 | 2 | 3 |
| All Engineers | 4 | 5 | 1 | 0 | 1 |
| All Photographers | 2 | 2 | 0 | 0 | 0 |
| All Professional Workers | 9 | 9 | 0 | 2 | 2 |
| TOTAL TECHNICAL WORKERS | 1 | 1 | 0 | 0 | 0 |
| All Engineering Technicians | 1 | 1 | 0 | 0 | 0 |
| TOTAL SERVICE WORKERS | 9 | 10 | 1 | 1 | 2 |
| All Janitors, Porters, & Cleaners | 1 | 1 | 0 | 0 | 0 |
| Guards & Doorkeepers | 6 | 7 | 1 | 1 | 2 |
| All Food Service Workers | 1 | 1 | 0 | 0 | 0 |
| All Service Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 382 | 438 | 56 | 50 | 106 |
| Mechanics, Maintenance | 8 | 10 | 2 | 0 | 2 |
| All Other Mechanics & Repairers | 8 | 10 | 2 | 1 | 3 |
| Truck Drivers | 34 | 40 | 6 | 2 | 8 |
| Logging Tractor Operators | 19 | 22 | 3 | 2 | 5 |
| Fallers &/or Buckers, Logging | 9 | 11 | 2 | 1 | 3 |
| Head Loaders (Lumber) | 5 | 6 | 1 | 1 | 2 |
| Kiln Operators | 7 | 9 | 2 | 0 | 2 |
| Kiln Transfer Operators | 5 | 6 | 1 | 1 | 2 |
| Kiln Stacker Operators | 10 | 12 | 2 | 1 | 3 |
| Planer Operators | 21 | 25 | 4 | 2 | 6 |
| Sorter Operators, Green Lumber | 17 | 20 | 3 | 3 | 6 |
| All Assemblers | 91 | 103 | 12 | 17 | 29 |
| All Other Skilled Craft Workers | 29 | 32 | 3 | 5 | 8 |
| All Other Semiskilled Workers | 88 | 97 | 9 | 11 | 20 |
| All Other Laborers & Unskilled Workers | 31 | 35 | 4 | 3 | 7 |
| TOTAL CLERICAL WORKERS | 39 | 43 | 4 | 6 | 10 |
| Secretaries | 7 | 8 | 1 | 2 | 3 |
| All Other Office Clerical Workers | 11 | 11 | 0 | 2 | 2 |
| Shipping Packers | 8 | 10 | 2 | 1 | 3 |
| All Other Plant Clerical Workers | 13 | 14 | 1 | 1 | 2 |
| TOTAL SALES WORKERS | 5 | 6 | 1 | 0 | 1 |
| All Sales Workers | 5 | 6 | 1 | 0 | 1 |
| TOTAL ALL OCCUPATIONS | 471 | 537 | 66 | 62 | 128 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

MAINTENANCE & PRODUCTION WORKERS

All Other Mechanics & Repairers
Mechanics, Automotive

All Other Skilled Craft Workers
Supervisors, Nonworking

All Other Semiskilled Workers
Delivery & Route Workers
Heavy Equipment Operators
Inspectors
Chain Offbearers, Lumber
Cut-off Sawyers, Log

CLERICAL WORKERS

All Other Plant Clerical Workers
Shipping &/or Receiving Clerks

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

COCHISE COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 93 | 106 | 13 | 14 | 27 |
| TOTAL PROFESSIONAL WORKERS | 98 | 109 | 11 | 11 | 22 |
| Metal Engineers | 5 | 6 | 1 | 0 | 1 |
| All Other Engineers | 12 | 14 | 2 | 0 | 2 |
| All Natural Scientists | 17 | 19 | 2 | 0 | 2 |
| Purchasing Agents &/or Buyers | 6 | 7 | 1 | 1 | 2 |
| Accountants & Auditors | 6 | 7 | 1 | 1 | 2 |
| Writers &/or Editors | 9 | 10 | 1 | 2 | 3 |
| Nurses, Professional | 7 | 8 | 1 | 1 | 2 |
| All Other Professional Workers | 36 | 38 | 2 | 6 | 8 |
| TOTAL TECHNICAL WORKERS | 29 | 32 | 3 | 4 | 7 |
| All Engineering Technicians | 17 | 18 | 1 | 3 | 4 |
| All Science Technicians | 5 | 6 | 1 | 0 | 1 |
| All Other Technicians | 7 | 8 | 1 | 1 | 2 |
| TOTAL SERVICE WORKERS | 51 | 57 | 6 | 6 | 12 |
| All Janitors, Porters, & Cleaners | 22 | 25 | 3 | 4 | 7 |
| Guards & Doorkeepers | 27 | 30 | 3 | 2 | 5 |
| All Food Service Workers | 1 | 1 | 0 | 0 | 0 |
| All Other Service Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 1,555 | 1,739 | 184 | 188 | 372 |
| Mechanics, Automotive | 8 | 9 | 1 | 1 | 2 |
| Mechanics, Maintenance | 19 | 23 | 4 | 2 | 6 |
| All Other Mechanics & Repairers | 3 | 3 | 0 | 1 | 1 |
| Pressers, Hand (Textiles) | 10 | 11 | 1 | 2 | 3 |
| Truck Drivers | 40 | 47 | 7 | 3 | 10 |
| Boilermakers | 12 | 14 | 2 | 1 | 3 |
| Carpenters | 7 | 8 | 1 | 1 | 2 |
| Crane, Derrick, & Hoist Operators | 28 | 32 | 4 | 3 | 7 |
| Electricians | 22 | 25 | 3 | 3 | 6 |
| Supervisors, Nonworking | 88 | 99 | 11 | 10 | 21 |
| Heavy Equipment Operators | 5 | 6 | 1 | 0 | 1 |
| Industrial Truck Operators | 15 | 17 | 2 | 1 | 3 |
| Machinists | 22 | 25 | 3 | 2 | 5 |
| Maintenance Repairers, General Utility | 47 | 54 | 7 | 4 | 11 |
| Plumbers &/or Pipefitters | 19 | 22 | 3 | 2 | 5 |
| Sewing Mach. Opers., Special Equip.-Garment | 250 | 259 | 9 | 32 | 41 |
| Stationary Engineers | 17 | 19 | 2 | 2 | 4 |
| Welders & Flamecutters | 13 | 15 | 2 | 2 | 4 |
| Offset Lithographic Press Operators | 8 | 9 | 1 | 1 | 2 |
| Bundlers (Textiles & Textile Prods.) | 22 | 23 | 1 | 3 | 4 |
| Casters, Ingots & Pigs | 7 | 8 | 1 | 1 | 2 |
| Thread Trimmers | 9 | 10 | 1 | 1 | 2 |
| Work Distributors (Garments) | 9 | 10 | 1 | 1 | 2 |
| Conveyor Ops./Tenders (Exc. Feeders & Loaders) | 9 | 10 | 1 | 1 | 2 |
| Furnace Chargers | 16 | 18 | 2 | 2 | 4 |
| Precipitator Operators | 5 | 6 | 1 | 0 | 1 |
| Phototypesetter Operators | 8 | 9 | 1 | 1 | 2 |
| Tappers, Metal | 7 | 8 | 1 | 1 | 2 |
| Pump Operators | 5 | 6 | 1 | 0 | 1 |
| All Assemblers | 153 | 183 | 30 | 27 | 57 |
| Batch Plant Operators, Concrete | 9 | 11 | 2 | 1 | 3 |
| All Other Skilled Craft Workers | 179 | 198 | 19 | 18 | 37 |
| All Other Semiskilled Workers | 244 | 273 | 29 | 29 | 58 |
| All Other Laborers & Unskilled Workers | 240 | 269 | 29 | 29 | 58 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

COCHISE COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL CLERICAL WORKERS | 213 | 242 | 29 | 37 | 66 |
| All Office Machine Operators | 4 | 4 | 0 | 0 | 0 |
| Bookkeepers, Hand | 26 | 29 | 3 | 5 | 8 |
| General Clerks, Office | 28 | 32 | 4 | 6 | 10 |
| Payroll &/or Timekeeping Clerks | 6 | 7 | 1 | 1 | 2 |
| Secretaries | 15 | 17 | 2 | 4 | 6 |
| Typists (Including Clerk-Typists) | 9 | 10 | 1 | 3 | 4 |
| All Other Office Clerical Workers | 40 | 44 | 4 | 7 | 11 |
| Shipping &/or Receiving Clerks | 15 | 17 | 2 | 1 | 3 |
| All Other Plant Clerical Workers | 70 | 82 | 12 | 10 | 22 |
| TOTAL SALES WORKERS | 26 | 28 | 2 | 4 | 6 |
| Sales Reps., Agents, &/or Associates | 17 | 18 | 1 | 3 | 4 |
| Sales Clerks (Excluding Cashiers) | 9 | 10 | 1 | 1 | 2 |
| TOTAL ALL OCCUPATIONS | 2,065 | 2,313 | 248 | 264 | 512 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Natural Scientists
Chemists

All Other Professional Workers
Reporters &/or Correspondents

TECHNICAL WORKERS

All Engineering Technicians
Drafters

All Science Technicians
Science Technicians

MAINTENANCE & PRODUCTION WORKERS

All Assemblers
Electro-Mechanical Equipment Assemblers
Electrical & Electronic Assemblers

All Other Skilled Craft Workers
Instrument Repairers
Furnace Operators &/or Cupola Tenders
Chief Operators
Furnance, Kiln, Drier, or Oven Opers./Tenders

MAINTENANCE & PRODUCTION WORKERS (CONT'D)

All Other Semiskilled Workers
Delivery & Route Workers
Stationary Boiler Firers
Testers
Loading-Machine Operators (Ammunition)
Cutting Machine Operators, Food

All Other Laborers & Unskilled Workers
Helpers, Trades
Oilers
Order Fillers
Production Packagers, Hand or Machine
Blockmaking-Machine Operators
Cannery Workers
Washers &/or Separators, Food

CLERICAL WORKERS

All Other Office Clerical Workers
Clerical Supervisors, Office or Plant

All Other Plant Clerical Workers
Production Clerks &/or Coordinators
Shipping Packers
Stock Clerks, Stockroom, Warehouse, or Storage Yard

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

COCONINO COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 146 | 172 | 26 | 22 | 48 |
| TOTAL PROFESSIONAL WORKERS | 69 | 81 | 12 | 10 | 22 |
| All Engineers | 27 | 33 | 6 | 1 | 7 |
| All Physical Scientists | 3 | 4 | 1 | 0 | 1 |
| All Photographers | 1 | 1 | 0 | 0 | 0 |
| Purchasing Agents &/or Buyers | 7 | 8 | 1 | 1 | 2 |
| Accountants & Auditors | 10 | 12 | 2 | 2 | 4 |
| Personnel & Labor Relations Specialists | 5 | 6 | 1 | 1 | 2 |
| All Other Professional Workers | 16 | 17 | 1 | 5 | 6 |
| TOTAL TECHNICAL WORKERS | 46 | 58 | 12 | 5 | 17 |
| All Engineering Technicians | 21 | 27 | 6 | 2 | 8 |
| Science Technicians | 6 | 8 | 2 | 1 | 3 |
| All Other Science Technicians | 14 | 16 | 2 | 1 | 3 |
| All Other Technicians | 5 | 7 | 2 | 1 | 3 |
| TOTAL SERVICE WORKERS | 45 | 54 | 9 | 7 | 16 |
| Janitors, Porters, & Cleaners | 26 | 31 | 5 | 5 | 10 |
| Guards & Doorkeepers | 6 | 7 | 1 | 0 | 1 |
| All Other Service Workers | 13 | 16 | 3 | 2 | 5 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 1,750 | 2,063 | 313 | 183 | 496 |
| Mechanics, Automotive | 27 | 33 | 6 | 2 | 8 |
| Engineering Equipment Mechanics | 9 | 11 | 2 | 1 | 3 |
| All Other Mechanics & Repairers | 31 | 38 | 7 | 2 | 9 |
| Truck Drivers | 212 | 251 | 39 | 16 | 55 |
| Carpenters | 12 | 15 | 3 | 1 | 4 |
| Delivery & Route Workers | 38 | 46 | 8 | 3 | 11 |
| Electricians | 30 | 38 | 8 | 3 | 11 |
| Supervisors, Nonworking | 69 | 84 | 15 | 8 | 23 |
| Heavy Equipment Operators | 10 | 12 | 2 | 1 | 3 |
| Industrial Truck Operators | 27 | 33 | 6 | 2 | 8 |
| Machinists | 53 | 64 | 11 | 6 | 17 |
| Maintenance Repairers, General Utility | 43 | 53 | 10 | 4 | 14 |
| Helpers, Trades | 16 | 20 | 4 | 1 | 5 |
| Oilers | 6 | 7 | 1 | 1 | 2 |
| Stationary Boiler Firers | 16 | 20 | 4 | 1 | 5 |
| Logging Tractor Operators | 52 | 64 | 12 | 4 | 16 |
| Offset Lithographic Press Operators | 16 | 18 | 2 | 3 | 5 |
| Camera Operators, Printing | 6 | 7 | 1 | 0 | 1 |
| Power-Barker Operators | 11 | 13 | 2 | 2 | 4 |
| Chain Offbearers, Lumber | 42 | 51 | 9 | 5 | 14 |
| Chippers, Lumber | 17 | 21 | 4 | 2 | 6 |
| Cut-Off Sawyers, Log | 9 | 11 | 2 | 1 | 3 |
| Edgers, Automatic &/or Pony | 12 | 15 | 3 | 1 | 4 |
| Fallers &/or Buckers, Logging | 47 | 58 | 11 | 5 | 16 |
| Gang Sawyers | 8 | 10 | 2 | 1 | 3 |
| Head Sawyers | 14 | 17 | 3 | 2 | 5 |
| Kiln Operators | 9 | 11 | 2 | 1 | 3 |
| Loaders, Car & Truck (Lumber) | 12 | 15 | 3 | 1 | 4 |
| Log Handling Equipment Operators | 19 | 23 | 4 | 3 | 7 |
| Log Inspectors, Graders, &/or Scalers | 10 | 12 | 2 | 1 | 3 |
| Lumber Graders | 8 | 10 | 2 | 1 | 3 |
| Resawyers | 13 | 16 | 3 | 1 | 4 |
| Saw Filers | 11 | 13 | 2 | 2 | 4 |
| Kiln Stacker Operators | 22 | 27 | 5 | 2 | 7 |
| Trim Saw Operators | 12 | 15 | 3 | 1 | 4 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

COCONINO COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Planer Operators | 34 | 42 | 8 | 4 | 12 |
| Pasteup Men/Women | 6 | 7 | 1 | 1 | 2 |
| Phototypesetting-Mach. Keyboard Opers. | 7 | 8 | 1 | 2 | 3 |
| All Other Assemblers | 45 | 61 | 16 | 9 | 25 |
| All Other Skilled Craft Workers | 119 | 150 | 31 | 14 | 45 |
| All Other Semiskilled Workers | 346 | 365 | 19 | 35 | 54 |
| All Other Laborers & Unskilled Workers | 244 | 278 | 34 | 27 | 61 |
| TOTAL CLERICAL WORKERS | 203 | 240 | 37 | 34 | 71 |
| All Office Machine Operators | 6 | 8 | 2 | 1 | 3 |
| Accounting Clerks | 15 | 18 | 3 | 3 | 6 |
| Bookkeepers, Hand | 14 | 17 | 3 | 3 | 6 |
| General Clerks, Office | 28 | 33 | 5 | 6 | 11 |
| Payroll &/or Timekeeping Clerks | 5 | 6 | 1 | 1 | 2 |
| Secretaries | 22 | 26 | 4 | 5 | 9 |
| All Other Office Clerical Workers | 34 | 39 | 5 | 7 | 12 |
| Production Clerks &/or Coordinators | 22 | 26 | 4 | 2 | 6 |
| Shipping Packers | 22 | 26 | 4 | 2 | 6 |
| Shipping &/or Receiving Clerks | 15 | 17 | 2 | 1 | 3 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 10 | 12 | 2 | 1 | 3 |
| Tally Clerks, Sawmill | 7 | 9 | 2 | 1 | 3 |
| All Other Plant Clerical Workers | 3 | 3 | 0 | 1 | 1 |
| TOTAL SALES WORKERS | 49 | 55 | 6 | 7 | 13 |
| Sales Reps., Agents, &/or Associates | 37 | 42 | 5 | 5 | 10 |
| All Other Sales Workers | 12 | 13 | 1 | 2 | 3 |
| TOTAL ALL OCCUPATIONS | 2,308 | 2,723 | 415 | 268 | 683 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Engineers
Mechanical Engineers

All Other Professional Workers
Reporters &/or Correspondents

TECHNICAL WORKERS

All Other Science Technicians
Timber Cruisers

TOTAL MAINTENANCE & PRODUCTION WORKERS

All Other Mechanics & Repairers
Mechanics, Maintenance

All Other Skilled Craft Workers
Cabinetmakers
Instrument Repairers
Bakers
Loader Engineers (Lumber)
Wood Machinists

TOTAL MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Other Semiskilled Workers
Inspectors
Sewing Mach. Opers., Regular Equip.-Garment
Welders & Flamecutters
Bleacher Operators, Pulp
Cut-Off Saw Operators, Lumber
Tenoner Operators
Insulation Wrapping or Braiding Mach. Opers.
Folders, Hand (Textile & Textile Prods.)
Sawyers, Tail
Cooks &/or Cookers
Mixers
Drier Operators

All Other Laborers & Unskilled Workers
Production Packagers, Hand or Machine
Pulpers
Wrapping-Machine Operators
Order Fillers

CLERICAL WORKERS

All Other Office Clerical Workers
Order Clerks

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

GILA COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 67 | 75 | 8 | 10 | 18 |
| TOTAL PROFESSIONAL WORKERS | 103 | 115 | 12 | 8 | 20 |
| Electrical & Electronic Engineers | 10 | 11 | 1 | 1 | 2 |
| Metal Engineers | 22 | 25 | 3 | 1 | 4 |
| All Other Engineers | 23 | 25 | 2 | 1 | 3 |
| All Natural & Mathematical Scientists | 9 | 10 | 1 | 0 | 1 |
| Systems Analysts, EDP | 5 | 6 | 1 | 0 | 1 |
| Purchasing Agents &/or Buyers | 6 | 7 | 1 | 1 | 2 |
| Accountants & Auditors | 7 | 8 | 1 | 1 | 2 |
| Nurses, Professional | 10 | 11 | 1 | 2 | 3 |
| All Other Professional Workers | 11 | 12 | 1 | 1 | 2 |
| TOTAL TECHNICAL WORKERS | 34 | 38 | 4 | 1 | 5 |
| All Engineering Technicians | 13 | 15 | 2 | 0 | 2 |
| Science Technicians | 20 | 22 | 2 | 1 | 3 |
| All Other Technicians | 1 | 1 | 0 | 0 | 0 |
| TOTAL SERVICE WORKERS | 27 | 30 | 3 | 4 | 7 |
| Janitors, Porters, & Cleaners | 17 | 19 | 2 | 3 | 5 |
| All Guards & Doorkeepers | 6 | 7 | 1 | 0 | 1 |
| All Food Service Workers | 3 | 3 | 0 | 1 | 1 |
| All Other Service Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 1,876 | 2,090 | 214 | 196 | 410 |
| Mechanics, Automotive | 17 | 20 | 3 | 2 | 5 |
| All Other Mechanics & Repairers | 95 | 108 | 13 | 8 | 21 |
| Truck Drivers | 38 | 44 | 6 | 3 | 9 |
| Blacksmiths | 5 | 6 | 1 | 0 | 1 |
| Boilermakers | 137 | 155 | 18 | 17 | 35 |
| Brakers, Train | 5 | 6 | 1 | 0 | 1 |
| Carpenters | 22 | 25 | 3 | 3 | 6 |
| Crane, Derrick, & Hoist Operators | 53 | 60 | 7 | 5 | 12 |
| Delivery & Route Workers | 5 | 6 | 1 | 0 | 1 |
| Electricians | 87 | 99 | 12 | 8 | 20 |
| Supervisors, Nonworking | 211 | 235 | 24 | 24 | 48 |
| Heavy Equipment Operators | 28 | 33 | 5 | 2 | 7 |
| Industrial Truck Operators | 62 | 71 | 9 | 4 | 13 |
| Instrument Repairers | 31 | 35 | 4 | 3 | 7 |
| Machinists | 70 | 79 | 9 | 8 | 17 |
| Maintenance Repairers, General Utility | 20 | 23 | 3 | 1 | 4 |
| Helpers, Trades | 74 | 82 | 8 | 8 | 16 |
| Oilers | 22 | 25 | 3 | 3 | 6 |
| Painters, Maintenance | 9 | 10 | 1 | 1 | 2 |
| Plumbers &/or Pipefitters | 67 | 76 | 9 | 7 | 16 |
| Welders & Flamecutters | 37 | 42 | 5 | 4 | 9 |
| Pump Operators, By-Products | 7 | 8 | 1 | 1 | 2 |
| Samplers &/or Test Preparers (Mining) | 13 | 15 | 2 | 1 | 3 |
| Water Treatment Plant Operators, Smelting | 6 | 7 | 1 | 0 | 1 |
| Tappers, Metal | 8 | 9 | 1 | 1 | 2 |
| All Other Skilled Craft Workers | 89 | 95 | 6 | 13 | 19 |
| All Other Semiskilled Workers | 273 | 297 | 24 | 30 | 54 |
| All Other Laborers & Unskilled Workers | 385 | 419 | 34 | 39 | 73 |
| TOTAL CLERICAL WORKERS | 128 | 145 | 17 | 26 | 43 |
| All Office Machine Operators | 5 | 6 | 1 | 0 | 1 |
| Bookkeepers, Hand | 8 | 9 | 1 | 2 | 3 |
| General Clerks, Office | 24 | 28 | 4 | 5 | 9 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

GILA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Secretaries | 14 | 16 | 2 | 3 | 5 |
| All Other Office Clerical Workers | 55 | 62 | 7 | 12 | 19 |
| All Plant Clerical Workers | 22 | 24 | 2 | 4 | 6 |
| TOTAL SALES WORKERS | 36 | 40 | 4 | 5 | 9 |
| Sales Reprs., Agents &/or Associates | 7 | 8 | 1 | 1 | 2 |
| All Other Sales Workers | 29 | 32 | 3 | 4 | 7 |
| TOTAL ALL OCCUPATIONS | 2,271 | 2,533 | 262 | 250 | 512 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Natural & Mathematical Scientists
Chemists

All Other Professional Workers
Personnel & Labor Relations Specialists

TECHNICAL WORKERS

All Engineering Technicians
Drafters

MAINTENANCE & PRODUCTION WORKERS

All Other Mechanics & Repairers
Mechanics, Maintenance

All Other Skilled Craft Workers
Stationary Engineers
Furnace Operators &/or Cupola Tenders

All Other Semiskilled Workers
Refractory Materials Repairers
Chain Offbearers, Lumber
Dust Operators &/or Ore Crushing Dust Collectors
Resawyers
Punch-Press Operators, Metal
Conveyor Operators or Tenders (Exc. Feeders & Loaders)
Furnace Chargers
Mailers

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Other Laborers & Unskilled Workers
Mill &/or Grinder Operators, Minerals

CLERICAL WORKERS

All Other Office Clerical Workers
Stenographers
Accounting Clerks
Personnel Clerks
Clerical Supervisors, Office or Plant

All Plant Clerical Workers
Weighers, Record Keeping
Stock Clerks, Stockroom, Warehouse, or Storage Yard

SALES WORKERS

All Other Sales Workers
Sales Clerks (Exc. Cashiers)

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

GRAHAM & GREENLEE COUNTIES

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 24 | 28 | 4 | 2 | 6 |
| TOTAL PROFESSIONAL WORKERS | 14 | 15 | 1 | 2 | 3 |
| All Engineers | 6 | 7 | 1 | 0 | 1 |
| All Professional Workers | 8 | 8 | 0 | 2 | 2 |
| TOTAL TECHNICAL WORKERS | 5 | 5 | 0 | 1 | 1 |
| All Janitors, Porters, & Cleaners | 3 | 3 | 0 | 1 | 1 |
| All Guards & Doorkeepers | 1 | 1 | 0 | 0 | 0 |
| All Service Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 681 | 763 | 82 | 75 | 157 |
| All Mechanics & Repairers | 9 | 12 | 3 | 0 | 3 |
| Truck Drivers | 11 | 14 | 3 | 0 | 3 |
| Crane, Derrick, and Hoist Operators | 24 | 27 | 3 | 3 | 6 |
| Electricians | 16 | 18 | 2 | 2 | 4 |
| Supervisors, Nonworking | 59 | 68 | 9 | 6 | 15 |
| Instrument Repairers | 5 | 6 | 1 | 0 | 1 |
| Machinists | 5 | 6 | 1 | 0 | 1 |
| Helpers, Trades | 104 | 114 | 10 | 12 | 22 |
| Pourers, Metal | 16 | 18 | 2 | 2 | 4 |
| Production Packagers, Hand or Machine | 28 | 35 | 7 | 4 | 11 |
| Refractory Materials Repairers | 7 | 8 | 1 | 1 | 2 |
| Drill-Press &/or Boring Machine Operators | 5 | 6 | 1 | 0 | 1 |
| Dust Opers. &/or Ore Crushing Dust Collectors | 7 | 8 | 1 | 0 | 1 |
| Slab Depiler Operators | 42 | 48 | 6 | 4 | 10 |
| Testers | 9 | 10 | 1 | 1 | 2 |
| Furnace Operators &/or Cupola Tenders | 11 | 12 | 1 | 2 | 3 |
| Furnace &/or Heater Operator Helpers | 41 | 46 | 5 | 5 | 10 |
| All Assemblers | 9 | 11 | 2 | 2 | 4 |
| All Other Skilled Craft Workers | 101 | 109 | 8 | 12 | 20 |
| All Other Semiskilled Workers | 165 | 180 | 15 | 18 | 33 |
| All Other Laborers & Unskilled Workers | 7 | 7 | 0 | 1 | 1 |
| TOTAL CLERICAL WORKERS | 43 | 50 | 7 | 7 | 14 |
| All Office Clerical Workers | 25 | 29 | 4 | 5 | 9 |
| All Plant Clerical Workers | 18 | 21 | 3 | 2 | 5 |
| TOTAL SALES WORKERS | 12 | 14 | 2 | 3 | 5 |
| All Sales Workers | 12 | 14 | 2 | 3 | 5 |
| TOTAL ALL OCCUPATIONS | 779 | 875 | 96 | 90 | 186 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

MAINTENANCE & PRODUCTION WORKERS

All Other Skilled Craft Workers
- Maintenance Repairers, General Utility
- Bakers

All Other Semiskilled Workers
- Delivery & Route Workers
- Industrial Truck Operators
- Sewing Machine Opers., Reg., Equip.-Nongarment
- Conveyor Opers. or Tenders (Exc. Feeders & Loaders)

All Assemblers
- Assemblers

CLERICAL WORKERS

All Office Clerical Workers
- Bookkeepers, Hand
- General Clerks, Office

All Plant Clerical Workers
- Shipping &/or Receiving Clerks

SALES WORKERS

All Sales Workers
- Sales Reps., Agents, &/or Associates

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

MARICOPA COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 8,449 | 10,288 | 1,839 | 1,247 | 3,086 |
| TOTAL PROFESSIONAL WORKERS | 13,684 | 17,066 | 3,382 | 1,263 | 4,645 |
| Aeronautical Engineers | 1,510 | 2,039 | 529 | 96 | 625 |
| Chemical Engineers | 84 | 99 | 15 | 6 | 21 |
| Civil Engineers | 38 | 49 | 11 | 5 | 16 |
| Electrical & Electronic Engineers | 4,081 | 5,029 | 948 | 252 | 1,200 |
| Industrial Engineers | 1,096 | 1,367 | 271 | 87 | 358 |
| Mechanical Engineers | 805 | 973 | 168 | 51 | 219 |
| All Other Engineers | 550 | 682 | 132 | 39 | 171 |
| Statisticians | 24 | 31 | 7 | 4 | 11 |
| All Other Mathematical Scientists | 30 | 41 | 11 | 7 | 18 |
| Chemists | 163 | 206 | 43 | 19 | 62 |
| Agricultural Scientists | 15 | 21 | 6 | 2 | 8 |
| Biological Scientists | 25 | 30 | 5 | 3 | 8 |
| All Other Natural Scientists | 15 | 17 | 2 | 2 | 4 |
| Systems Analysts, EDP | 123 | 134 | 11 | 6 | 17 |
| Systems Analysts, Business | 134 | 172 | 38 | 6 | 44 |
| Systems Analysts, Scientific & Technical | 703 | 903 | 200 | 32 | 232 |
| Photographers | 52 | 62 | 10 | 6 | 16 |
| Purchasing Agents &/or Buyers | 766 | 954 | 188 | 103 | 291 |
| Accountants & Auditors | 811 | 989 | 178 | 125 | 303 |
| Commercial Artists | 195 | 240 | 45 | 36 | 81 |
| Cost Estimators | 100 | 126 | 26 | 22 | 48 |
| Writers &/or Editors | 484 | 594 | 110 | 89 | 199 |
| Nurses, Professional | 84 | 104 | 20 | 17 | 37 |
| Personnel & Labor Relations Specialists | 366 | 447 | 81 | 45 | 126 |
| Reporters &/or Correspondents | 226 | 271 | 45 | 41 | 86 |
| Designers | 201 | 244 | 43 | 17 | 60 |
| Estimators, Printing Services | 22 | 26 | 4 | 5 | 9 |
| Contract Administrators | 120 | 151 | 31 | 15 | 46 |
| All Other Professional Workers | 861 | 1,065 | 204 | 125 | 329 |
| TOTAL TECHNICAL WORKERS | 7,189 | 8,898 | 1,709 | 471 | 2,180 |
| Computer Programmers | 147 | 164 | 17 | 7 | 24 |
| Computer Programmers, Business | 223 | 285 | 62 | 12 | 74 |
| Computer Programmers, Scientific & Technical | 332 | 425 | 93 | 17 | 110 |
| Engineering Technicians | 7 | 8 | 1 | 0 | 1 |
| Drafters | 950 | 1,184 | 234 | 81 | 315 |
| Electrical & Electronic Technicians | 3,558 | 4,355 | 797 | 211 | 1,008 |
| Mechanical Engineering Technicians | 948 | 1,220 | 272 | 34 | 306 |
| Tool Programmers, Numerical Control | 81 | 103 | 22 | 6 | 28 |
| Industrial Engineering Technicians | 86 | 103 | 17 | 10 | 27 |
| All Other Engineering Technicians | 363 | 438 | 75 | 42 | 117 |
| Science Technicians | 215 | 265 | 50 | 19 | 69 |
| Biological Science Technicians | 76 | 101 | 25 | 9 | 34 |
| All Other Science Technicians (Exc. Med. & Dental) | 66 | 88 | 22 | 8 | 30 |
| All Other Technicians | 137 | 159 | 22 | 15 | 37 |
| TOTAL SERVICE WORKERS | 1,640 | 1,991 | 351 | 252 | 603 |
| Janitors, Porters, & Cleaners | 918 | 1,108 | 190 | 172 | 362 |
| Guards & Doorkeepers | 405 | 497 | 92 | 25 | 117 |
| Food Service Workers (Exc. Cashiers) | 204 | 255 | 51 | 39 | 90 |
| Supervisors, Nonworking - Service | 67 | 82 | 15 | 7 | 22 |
| All Other Service Workers | 46 | 49 | 3 | 9 | 12 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 64,976 | 78,772 | 13,796 | 8,804 | 22,600 |
| Mechanics, Automotive | 349 | 427 | 78 | 29 | 107 |
| Electric Instrument Repairers | 11 | 14 | 3 | 1 | 4 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

MARICOPA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Engineering Equipment Mechanics | 44 | 54 | 10 | 4 | 14 |
| Mechanics, Maintenance | 510 | 621 | 111 | 48 | 159 |
| Refrigeration/Air Conditioning Mechanics | 51 | 62 | 11 | 4 | 15 |
| Coin/Vending Machine Servicers | 33 | 33 | 0 | 3 | 3 |
| Mechanics, Sewing Machine | 28 | 31 | 3 | 2 | 5 |
| All Other Mechanics & Repairers | 506 | 639 | 133 | 42 | 175 |
| Developers &/or Projection Printers | 9 | 11 | 2 | 1 | 3 |
| Pressers, Hand (Textiles) | 50 | 55 | 5 | 13 | 18 |
| Pressers, Machine (Textiles, Exc. Laundry) | 8 | 9 | 1 | 1 | 2 |
| Truck Drivers | 1,881 | 2,281 | 400 | 142 | 542 |
| Cabinetmakers | 325 | 396 | 71 | 28 | 99 |
| Carpenters | 275 | 352 | 77 | 36 | 113 |
| Cooks &/or Cookers | 24 | 24 | 0 | 4 | 4 |
| Crane, Derrick, & Hoist Operators | 94 | 115 | 21 | 10 | 31 |
| Delivery & Route Workers | 1,250 | 1,380 | 130 | 86 | 216 |
| Extractor &/or Extractor Plant Operators | 20 | 20 | 0 | 3 | 3 |
| Electricians | 372 | 452 | 80 | 37 | 117 |
| Filers, Grinders, & Buffers (Exc. Lens) | 627 | 769 | 142 | 53 | 195 |
| Supervisors, Nonworking | 3,093 | 3,766 | 673 | 356 | 1,029 |
| Gear Cutting &/or Grinding Machine Opers. | 154 | 203 | 49 | 19 | 68 |
| Glaziers | 33 | 43 | 10 | 3 | 13 |
| Heavy Equipment Operators | 83 | 103 | 20 | 7 | 27 |
| Riggers | 12 | 15 | 3 | 1 | 4 |
| Industrial Truck Operators | 752 | 916 | 164 | 57 | 221 |
| Inspectors | 2,260 | 2,830 | 570 | 339 | 909 |
| Instructors, Apparel & Textile Machines | 21 | 23 | 2 | 2 | 4 |
| Jewelers &/or Silversmiths | 28 | 30 | 2 | 5 | 7 |
| Laminating-Machine Operators, Furniture | 28 | 30 | 2 | 3 | 5 |
| Lens Grinders (Exc. Ophthalmic Lens Grinders) | 60 | 64 | 4 | 10 | 14 |
| Loaders, Tank Cars &/or Trucks | 25 | 33 | 8 | 3 | 11 |
| Machinists | 1,638 | 2,088 | 450 | 178 | 628 |
| Mattress Makers | 57 | 61 | 4 | 8 | 12 |
| Maintenance Repairers, General Utility | 870 | 1,034 | 164 | 82 | 246 |
| Helpers, Trades | 718 | 898 | 180 | 85 | 265 |
| Metal Fabricators (Exc. Sheet Metal Wkrs.) | 78 | 100 | 22 | 6 | 28 |
| Mixers | 49 | 49 | 0 | 6 | 6 |
| Millwrights | 60 | 76 | 16 | 8 | 24 |
| Oilers | 90 | 111 | 21 | 11 | 32 |
| Order Fillers | 691 | 839 | 148 | 45 | 193 |
| Oven Operators | 23 | 23 | 0 | 3 | 3 |
| Painters, Maintenance | 44 | 54 | 10 | 6 | 16 |
| Pourers, Metal | 49 | 54 | 5 | 5 | 10 |
| Electroplaters | 416 | 529 | 113 | 50 | 163 |
| Plumbers &/or Pipefitters | 117 | 144 | 27 | 13 | 40 |
| Press Operators &/or Plate Printers | 82 | 97 | 15 | 7 | 22 |
| Production Packagers, Hand or Machine | 907 | 1,008 | 101 | 143 | 244 |
| Roll Forming Machine Operators | 6 | 8 | 2 | 1 | 3 |
| Sandblasters &/or Shotblasters | 37 | 43 | 6 | 5 | 11 |
| Sewing Mach. Opers., Regular Equip.-Garment | 1,029 | 1,135 | 106 | 137 | 243 |
| Sewing Mach. Opers., Special Equip.-Garment | 250 | 276 | 26 | 33 | 59 |
| Sewing Mach. Opers., Reg. Equip.-Nongarment | 210 | 228 | 18 | 28 | 46 |
| Sewing Mach. Opers., Spec. &/or Auto Equip.-Nongarment | 122 | 133 | 11 | 17 | 28 |
| Sheet Metal Workers | 819 | 1,053 | 234 | 60 | 294 |
| Stationary Engineers | 44 | 50 | 6 | 5 | 11 |
| Structural-Steel Workers | 195 | 250 | 55 | 16 | 71 |
| Tool & Diemakers | 542 | 686 | 144 | 88 | 232 |
| Welders & Flamecutters | 1,261 | 1,618 | 357 | 150 | 507 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

MARICOPA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Offset Lithographic Press Operators | 520 | 622 | 102 | 85 | 187 |
| Platemakers | 68 | 81 | 13 | 11 | 24 |
| Strippers (Printing & Publishing) | 139 | 166 | 27 | 9 | 36 |
| Camera Operators, Printing | 164 | 196 | 32 | 42 | 74 |
| Strike-On-Machine Operators | 17 | 20 | 3 | 5 | 8 |
| Photolettering Machine Operators | 6 | 7 | 1 | 1 | 2 |
| Opticians, Dispensing &/or Optical Mechs. | 32 | 34 | 2 | 5 | 7 |
| Trimmers, Machine | 25 | 29 | 4 | 3 | 7 |
| Bakers | 29 | 29 | 0 | 5 | 5 |
| Baker Helpers | 23 | 23 | 0 | 4 | 4 |
| Bench Hands, Jewelry | 15 | 16 | 1 | 2 | 3 |
| Blockmaking-Machine Operators | 46 | 57 | 11 | 6 | 17 |
| Boners, Meat | 64 | 65 | 1 | 7 | 8 |
| Boring-Machine Operators, Wood | 7 | 9 | 2 | 1 | 3 |
| Brick & Tile Making Machine Operators | 85 | 105 | 20 | 12 | 32 |
| Textiles & Textile Prods.) | 29 | 32 | 3 | 3 | 6 |
| utchers, All-Around | 75 | 76 | 1 | 7 | 8 |
| Cage Makers, Hand or Machine | 22 | 27 | 5 | 3 | 8 |
| Carcass Splitters | 29 | 29 | 0 | 3 | 3 |
| Casing Finishers &/or Stuffers (Food & Kindred) | 6 | 6 | 0 | 1 | 1 |
| Casters, Pottery & Porcelain | 10 | 12 | 2 | 2 | 4 |
| Cheesemkers | 10 | 10 | 0 | 1 | 1 |
| Cheesemaker Helpers | 11 | 11 | 0 | 1 | 1 |
| Chemical Operators-B | 24 | 29 | 5 | 4 | 9 |
| Coilers, Winders, &/or Spoolers | 240 | 262 | 22 | 28 | 50 |
| Cooler Room Workers, Meat | 30 | 30 | 0 | 4 | 4 |
| Coremakers, Hand, Bench &/or Floor | 32 | 35 | 3 | 4 | 7 |
| Corrugator Operators | 19 | 22 | 3 | 2 | 5 |
| Cut-Off Saw Operators, Lumber | 73 | 87 | 14 | 9 | 23 |
| Cutters, Portable Machine | 29 | 32 | 3 | 4 | 7 |
| Cutting & Creasing Press Operators | 10 | 11 | 1 | 2 | 3 |
| Dado Operators | 11 | 14 | 3 | 2 | 5 |
| Dairy Processing Equipment Operators | 154 | 155 | 1 | 20 | 21 |
| Die Cutters &/or Clicking-Machine Opers. | 22 | 25 | 3 | 3 | 6 |
| Dividing &/or Dough-Brake Mach. Opers. | 29 | 29 | 0 | 5 | 5 |
| Drill-Press &/or Boring Machine Operators | 427 | 556 | 129 | 52 | 181 |
| Etchers &/or Engravers | 38 | 46 | 8 | 6 | 14 |
| Extrusion Press Opers., Hot Billets | 74 | 81 | 7 | 10 | 17 |
| Fabricators, Plastics | 80 | 91 | 11 | 9 | 20 |
| Finishers, Hand (Plastics) | 35 | 40 | 5 | 5 | 10 |
| Finishers, Pottery & Porcelain | 19 | 23 | 4 | 4 | 8 |
| Flavor-Room Workers &/or Freezer Opers. | 31 | 31 | 0 | 5 | 5 |
| Flexo-Folder-Gluer Operators | 23 | 26 | 3 | 4 | 7 |
| Garment Repairers | 31 | 34 | 3 | 8 | 11 |
| Grain Receivers | 6 | 6 | 0 | 1 | 1 |
| Grinding &/or Abrading Machine Opers., Metal | 649 | 849 | 200 | 91 | 291 |
| Heat Treaters, Annealers, &/or Temperers | 70 | 85 | 15 | 9 | 24 |
| Ingredient Scalers (Baking) | 11 | 11 | 0 | 0 | 0 |
| Lay-Out Markers, Wood | 11 | 14 | 3 | 2 | 5 |
| Lathe Operators, Wood | 5 | 7 | 2 | 0 | 2 |
| Lathe &/or Turning Machine Operators, Metal | 1,045 | 1,385 | 340 | 147 | 487 |
| Lay-Out Markers, Metal | 141 | 183 | 42 | 18 | 60 |
| Loaders, Car & Truck (Lumber) | 17 | 22 | 5 | 2 | 7 |
| Machine Setters, Woodworking | 11 | 13 | 2 | 1 | 3 |
| Machine Tool Operators, Combination | 820 | 1,002 | 182 | 113 | 295 |
| Machine Tool Operators, Numerical-Control | 484 | 613 | 129 | 67 | 196 |
| Machine Tool Operators, Toolroom | 137 | 181 | 44 | 15 | 59 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

MARICOPA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Machine Tool Setters, Metalworking | 154 | 198 | 44 | 16 | 60 |
| Meat Grinders | 7 | 7 | 0 | 1 | 1 |
| Millers (Food & Kindred) | 15 | 15 | 0 | 1 | 1 |
| Milling &/or Planing Machine Operators | 441 | 582 | 141 | 62 | 203 |
| Wood Machinists | 94 | 114 | 20 | 11 | 31 |
| Molders, Bench &/or Floor | 34 | 38 | 4 | 4 | 8 |
| Molders, Machine (Exc. Wax Molder) | 63 | 73 | 10 | 8 | 18 |
| Nailing-Machine Operators | 42 | 52 | 10 | 5 | 15 |
| Off-Bearers | 13 | 17 | 4 | 1 | 5 |
| Patternmakers, Metal | 12 | 15 | 3 | 2 | 5 |
| Plastic-Top Installers | 46 | 49 | 3 | 5 | 8 |
| Plater Helpers | 192 | 246 | 54 | 23 | 77 |
| Power-Screwdriver Operators | 18 | 23 | 5 | 2 | 7 |
| Ripsaw Operators | 63 | 73 | 10 | 7 | 17 |
| Rolling-Machine Operators | 10 | 10 | 0 | 1 | 1 |
| Rubbers | 11 | 13 | 2 | 2 | 4 |
| Saddle Makers | 7 | 8 | 1 | 1 | 2 |
| Sanders, Wood | 102 | 119 | 17 | 12 | 29 |
| Sawyers, Metal | 56 | 71 | 15 | 7 | 22 |
| Setters &/or Drawers | 26 | 32 | 6 | 3 | 9 |
| Shakeout Workers, Foundry | 33 | 36 | 3 | 4 | 7 |
| Shaper &/or Router Operators | 10 | 13 | 3 | 1 | 4 |
| Skin Peeling Machine Operators | 5 | 5 | 0 | 1 | 1 |
| Skinners, Animal | 40 | 40 | 0 | 5 | 5 |
| Slitting-Machine Operators | 14 | 16 | 2 | 2 | 4 |
| Slotter Operators | 8 | 9 | 1 | 1 | 2 |
| Spot Cleaners | 7 | 8 | 1 | 1 | 2 |
| Spreaders (Textiles & Textile Prods.) | 41 | 45 | 4 | 5 | 9 |
| Springers | 13 | 14 | 1 | 2 | 3 |
| Stone Setters | 9 | 10 | 1 | 1 | 2 |
| Stunners | 28 | 28 | 0 | 3 | 3 |
| Taping-Machine Operators | 6 | 7 | 1 | 1 | 2 |
| Testers | 1,173 | 1,465 | 292 | 139 | 431 |
| Thread Trimmers | 44 | 49 | 5 | 5 | 10 |
| Trim-Saw Operators | 36 | 47 | 11 | 4 | 15 |
| Upholstery Trimmers | 18 | 19 | 1 | 3 | 4 |
| Variety Saw Operators | 17 | 20 | 3 | 2 | 5 |
| Wax Pattern Workers | 157 | 170 | 13 | 18 | 31 |
| Woodworking-Machine Operators | 114 | 139 | 25 | 15 | 40 |
| Work Distributors (Garments) | 42 | 46 | 4 | 5 | 9 |
| Press Tenders, Rubber Goods | 59 | 67 | 8 | 7 | 15 |
| Painters, Production | 373 | 461 | 88 | 44 | 132 |
| Riveters, Light | 24 | 31 | 7 | 3 | 10 |
| Punch-Press Operators, Metal | 305 | 391 | 86 | 36 | 122 |
| Punch-Press Setters, Metal | 54 | 69 | 15 | 6 | 21 |
| Shear &/or Slitter Operators, Metal | 142 | 181 | 39 | 17 | 56 |
| Shear &/or Slitter Setters | 34 | 43 | 9 | 4 | 13 |
| Coil Winders | 308 | 384 | 76 | 36 | 112 |
| Encapsulators | 729 | 908 | 179 | 86 | 265 |
| Compression &/or Injection Molding Machine Operators, Plastics | 449 | 525 | 76 | 52 | 128 |
| Coil Finishers | 161 | 200 | 39 | 19 | 58 |
| Conveyor Operators or Tenders (Exc. Feeders & Loaders) | 25 | 30 | 5 | 3 | 8 |
| Dip Platers, Non-Electrolytic | 67 | 87 | 20 | 8 | 28 |
| Furnace Operators &/or Cupola Tenders | 65 | 76 | 11 | 7 | 18 |
| Cutting Machine Operators, Food | 35 | 35 | 0 | 5 | 5 |
| Setters, Plastic Molding Machine | 70 | 80 | 10 | 7 | 17 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

MARICOPA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Fitters, Structural Metal | 190 | 244 | 54 | 23 | 77 |
| Wire Weavers | 23 | 29 | 6 | 3 | 9 |
| Upholsterers | 73 | 78 | 5 | 11 | 16 |
| Upholstery Cutters | 16 | 17 | 1 | 2 | 3 |
| Cannery Workers | 88 | 89 | 1 | 10 | 11 |
| Furnace &/or Heater Operator Helpers | 37 | 40 | 3 | 5 | 8 |
| Chief Operators | 11 | 15 | 4 | 1 | 5 |
| Scrap Sorters | 29 | 32 | 3 | 3 | 6 |
| Cutters, Hand | 9 | 10 | 1 | 1 | 2 |
| Turners (Textile Products) | 26 | 29 | 3 | 3 | 6 |
| Folders, Hand (Textiles & Textile Prods.) | 116 | 128 | 12 | 13 | 25 |
| Power Brake &/or Bending Mach. Opers., Metal | 161 | 207 | 46 | 23 | 69 |
| Mill &/or Grinding Opers., Minerals | 28 | 34 | 6 | 2 | 8 |
| Hand Compositors | 51 | 61 | 10 | 8 | 18 |
| Imposer & Makeup Arrangers | 22 | 26 | 4 | 4 | 8 |
| Linecasting-Machine Operators | 30 | 36 | 6 | 5 | 11 |
| Linecasting-Machine Tenders | 13 | 16 | 3 | 2 | 5 |
| Pasteup Men/Women | 222 | 266 | 44 | 26 | 70 |
| Phototypesetting-Mach. Keyboard Opers. | 23 | 28 | 5 | 6 | 11 |
| Phototypesetting-Mach. Monitors | 20 | 24 | 4 | 3 | 7 |
| Phototypesetting Operators | 65 | 78 | 13 | 10 | 23 |
| Proofreaders, Composed Copy | 86 | 103 | 17 | 19 | 36 |
| Retouchers (Artist) | 11 | 13 | 2 | 1 | 3 |
| Photoengravers | 15 | 18 | 3 | 1 | 4 |
| Letter Press Opers. Sheet, Roll, or Web Fed | 265 | 317 | 52 | 23 | 75 |
| Steel Die Press Operators | 24 | 29 | 5 | 2 | 7 |
| Press Assistants & Feeders | 182 | 218 | 36 | 21 | 57 |
| Setters, Bindery Machines | 42 | 50 | 8 | 7 | 15 |
| Mailers | 196 | 235 | 39 | 35 | 74 |
| Weighers, Production | 8 | 8 | 0 | 0 | 0 |
| Food Shapers, Hand | 36 | 36 | 0 | 7 | 7 |
| Washers &/or Separators | 46 | 46 | 0 | 7 | 7 |
| Equipment Cleaners, Hand | 64 | 65 | 1 | 7 | 8 |
| Gluers &/or Cementers, Hand | 26 | 32 | 6 | 6 | 12 |
| Cutters, Machine (Leather, Paper, & Textiles) | 43 | 50 | 7 | 6 | 13 |
| Screen or Stencil Printers &/or Setters (Printing) | 92 | 110 | 18 | 21 | 39 |
| Screen Cutters &/or Makers, Non-Photographic | 13 | 16 | 3 | 2 | 5 |
| Screen Makers, Photographic Process | 10 | 12 | 2 | 1 | 3 |
| Bookbinders, Hand | 58 | 69 | 11 | 12 | 23 |
| Bookbinders, Machine | 183 | 219 | 36 | 36 | 72 |
| Bindery Workers, Assembly | 189 | 226 | 37 | 18 | 55 |
| Bindery Workers, Stitching | 28 | 34 | 6 | 2 | 8 |
| All Other Bindery Workers | 202 | 242 | 40 | 19 | 59 |
| Cushion Makers | 11 | 12 | 1 | 1 | 2 |
| Grinder Opers., Chem., Plastics, & Related | 29 | 35 | 6 | 2 | 8 |
| Extruder Opers., Plastics or Rubber | 57 | 65 | 8 | 8 | 16 |
| Extruder Oper. Helpers, Plastics or Rubber | 46 | 52 | 6 | 7 | 13 |
| Pump Operators | 20 | 24 | 4 | 3 | 7 |
| Sand Cutters, Mixers &/or Slingers | 27 | 30 | 3 | 1 | 4 |
| Assemblers | 1,695 | 2,000 | 305 | 326 | 631 |
| Machine Assemblers | 757 | 1,005 | 248 | 73 | 321 |
| Instrument Makers &/or Assemblers | 49 | 60 | 11 | 8 | 19 |
| Electro-Mechanical Equipment Assemblers | 771 | 977 | 206 | 151 | 357 |
| Electrical & Electronic Assemblers | 12,162 | 15,038 | 2,876 | 2,367 | 5,243 |
| All Other Assemblers | 862 | 1,107 | 245 | 160 | 405 |
| Furnace, Kiln, Drier, or Oven Opers./Tenders | 22 | 27 | 5 | 3 | 8 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

MARICOPA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Batch Plant Operators, Concrete | 41 | 51 | 10 | 5 | 15 |
| Clay Makers | 5 | 6 | 1 | 1 | 2 |
| Mixers &/or Blenders, Chemicals & Chem. Prods. | 259 | 332 | 73 | 31 | 104 |
| Laminators, Preforms | 56 | 67 | 11 | 7 | 18 |
| All Other Skilled Craft Workers | 1,630 | 1,940 | 310 | 165 | 475 |
| All Other Semiskilled Workers | 4,144 | 4,599 | 455 | 504 | 959 |
| All Other Laborers & Unskilled Workers | 3,450 | 4,063 | 613 | 409 | 1,022 |
| TOTAL CLERICAL WORKERS | 14,035 | 17,195 | 3,160 | 2,692 | 5,852 |
| Bookkeeping &/or Billing Machine Opers. | 48 | 59 | 11 | 9 | 20 |
| Computer Operators | 430 | 536 | 106 | 49 | 155 |
| Keypunch Operators | 310 | 377 | 67 | 70 | 137 |
| Peripheral EDP Equipment Operators | 130 | 163 | 33 | 32 | 65 |
| All Other Office Machine Operators | 129 | 158 | 29 | 37 | 66 |
| Stenographers | 91 | 114 | 23 | 20 | 43 |
| Accounting Clerks | 808 | 984 | 176 | 164 | 340 |
| Bookkeepers, Hand | 509 | 615 | 106 | 103 | 209 |
| Cashiers | 37 | 39 | 2 | 8 | 10 |
| File Clerks | 157 | 194 | 37 | 45 | 82 |
| General Clerks, Office | 1,806 | 2,218 | 412 | 404 | 816 |
| Order Clerks | 198 | 237 | 39 | 43 | 82 |
| Payroll &/or Timekeeping Clerks | 237 | 285 | 48 | 44 | 92 |
| Personnel Clerks | 174 | 213 | 39 | 50 | 89 |
| Procurement Clerks | 133 | 162 | 29 | 16 | 45 |
| Receptionists | 137 | 167 | 30 | 36 | 66 |
| Secretaries | 2,304 | 2,838 | 534 | 547 | 1,081 |
| Statistical Clerks | 213 | 269 | 56 | 48 | 104 |
| Switchboard Operators | 50 | 61 | 11 | 13 | 24 |
| Switchboard Operators/Receptionists | 168 | 204 | 36 | 45 | 81 |
| Messengers | 27 | 32 | 5 | 4 | 9 |
| Typists (Including Clerk-Typists) | 519 | 630 | 111 | 139 | 250 |
| Clerical Supervisors, Office or Plant | 331 | 415 | 84 | 42 | 126 |
| Circulation Clerks | 183 | 219 | 36 | 40 | 76 |
| Classified-Ad Clerks, Newspaper | 35 | 42 | 7 | 7 | 14 |
| Customer Service Reps., Print. & Publish. | 54 | 65 | 11 | 12 | 23 |
| Telephone Ad-Takers, Newspaper | 155 | 186 | 31 | 33 | 64 |
| All Other Office Clerical Workers | 703 | 864 | 161 | 157 | 318 |
| Production Clerks &/or Coordinators | 1,180 | 1,463 | 283 | 134 | 417 |
| Shipping Packers | 658 | 786 | 128 | 77 | 205 |
| Shipping &/or Receiving Clerks | 591 | 720 | 129 | 55 | 184 |
| Weighers, Record Keeping | 16 | 17 | 1 | 2 | 3 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 1,153 | 1,427 | 274 | 136 | 410 |
| Dispatchers, Vehicle, Service or Work | 77 | 95 | 18 | 9 | 27 |
| All Other Plant Clerical Workers | 284 | 341 | 57 | 62 | 119 |
| TOTAL SALES WORKERS | 2,421 | 2,886 | 465 | 320 | 785 |
| Sales Reps., Agents, &/or Associates | 2,227 | 2,666 | 439 | 293 | 732 |
| Sales Clerks (Excluding Cashiers) | 173 | 195 | 22 | 23 | 45 |
| All Other Sales Workers | 21 | 25 | 4 | 4 | 8 |
| TOTAL ALL OCCUPATIONS | 112,394 | 137,096 | 24,702 | 15,049 | 39,751 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Other Engineers
Metal Engineers

All Other Mathematical Scientists
Mathematical Scientists
Mathematicians

All Other Natural Scientists
Physicists

All Other Professional Workers
Lawyers

All Other Engineering Technicians
Spectroscopists

All Other Science Technicians
(Exc. Med. & Dental)
Physical Science Technicians

MAINTENANCE & PRODUCTION WORKERS

All Other Mechanics & Repairers
Mechanics, Aircraft
Electric Motor Repairers
Data Processing Machine Repairers

All Other Assemblers
Aircraft Structure and Surfaces
Assemblers, Class B

All Other Skilled Craft Workers
Compositors & Typesetters
Instrument Repairers
Asphalt-Plant Operators
Chemical Operators - A
Concrete-Stone Fabricators
Die Polishers, Wire &/or Tubes
Gem Cutters
Glassblowers
Header Operators
Hose Makers
Patternmakers, Wood
Refinery Operators
Sugar Boilers
Wire Drawers
Wirers, Electronic
Linecasting-Machine Keyboard Operators
Monotype-Keyboard Operators
Gravure Press Operators
Rolling Mill Operators &/or Attendants
Tinters

All Other Semiskilled Workers
Heaters, Metal
Refractory Materials Repairers
Drier Operators (Food & Kindred)

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

Chain Offbearers, Lumber
Concrete Pipe Makers
Coremakers, Machine
Curers, Rubber Goods
Draw-Bench Operators &/or Tube Drawers
Dry Curers
Envelope-Machine Operators
Insulating Extruding &/or Lead Press Opers.
Pilling Machine Operators
Fusing Machine Operators
Icemakers
Machine Setters, Paper Goods
Rubber-Mill Operators
Picklers, Continuous Pickling Line
Presser &/or Expeller Operators
Sawyers, Plastics
Screener Operators
Smokers
Spray Machine Operators (Ceramics)
Steel Pourer Helpers
Stickers, Slaughterhouse
Stranding Machine Operators
Stretcher-Leveler Operators
Tenoner Operators
Coil Tapers, Hand or Machine
Farm Equipment Operators
Linter Machine Tenders
Drier Operators, Chem., Plastic Resins, & Rubber
Concrete Vault Makers
Furnace Chargers
Insulation Wrapping or Braiding Machine Operators
Casket Coverers &/or Liners (Exc. Makers)
Planer Operators
Copy Markers
Ink Workers
Depositors, Food
Mold Closers, Core &/or Weight & Jacket Setters
Embossing, Stamping, &/or Marking Machine Opers.
Pipe & Tank Liners
Rolling Mill Operator Helpers, Rough or Finished
Decorators, Hand
Blow Molding Machine Operators
Press Operators, Plastic
Vacuum Plastic Forming Machine Operators

All Other Laborers & Unskilled Workers
Chemical Operator Helpers
Layboy Tenders
Molders, Machine (Pharmaceuticals)
Novelty Workers (Food & Kindred)
Paper-Reel &/or Rewinder Operators
Rubber Goods Cutters & Finishers
Samplers &/or Test Preparers (Mining)
Second Cutters, Hand (Glass)
Strippers (Rubber & Rubber Products)
Baling-Machine Operators

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

MOHAVE COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 116 | 136 | 20 | 17 | 37 |
| TOTAL PROFESSIONAL WORKERS | 115 | 131 | 16 | 13 | 29 |
| Mechanical Engineers | 15 | 17 | 2 | 1 | 3 |
| All Other Engineers | 32 | 36 | 4 | 2 | 6 |
| Systems Analysts, Business | 8 | 9 | 1 | 1 | 2 |
| Purchasing Agents &/or Buyers | 13 | 16 | 3 | 1 | 4 |
| Accountants & Auditors | 8 | 9 | 1 | 2 | 3 |
| Reporters &/or Correspondents | 22 | 25 | 3 | 4 | 7 |
| All Other Professional Workers | 17 | 19 | 2 | 2 | 4 |
| TOTAL TECHNICAL WORKERS | 143 | 174 | 31 | 17 | 48 |
| All Engineering Technicians | 125 | 153 | 28 | 15 | 43 |
| Science Technicians | 6 | 7 | 1 | 1 | 2 |
| All Other Technicians | 12 | 14 | 2 | 1 | 3 |
| TOTAL SERVICE WORKERS | 47 | 54 | 7 | 5 | 12 |
| Janitors, Porters, and Cleaners | 21 | 24 | 3 | 4 | 7 |
| Guards and Doorkeepers | 23 | 26 | 3 | 1 | 4 |
| All Food Service Workers | 2 | 3 | 1 | 0 | 1 |
| All Other Service Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 2,203 | 2,494 | 291 | 240 | 531 |
| Mechanics, Automotive | 38 | 47 | 9 | 4 | 13 |
| Mechanics, Maintenance | 42 | 48 | 6 | 4 | 10 |
| All Other Mechanics & Repairers | 11 | 14 | 3 | 1 | 4 |
| Truck Drivers | 40 | 47 | 7 | 3 | 10 |
| Blacksmiths | 6 | 7 | 1 | 1 | 2 |
| Delivery & Route Workers | 16 | 19 | 3 | 1 | 4 |
| Filers, Grinders, Buffers ( xc. Lens) | 103 | 119 | 16 | 8 | 24 |
| S rvisors, Nonworking | 100 | 115 | 15 | 12 | 27 |
| Industrial Truck Operators | 37 | 43 | 6 | 2 | 8 |
| Inspectors | 78 | 90 | 12 | 11 | 23 |
| Maintenance Repairers, General Utility | 20 | 24 | 4 | 2 | 6 |
| Order Fillers | 6 | 7 | 1 | 0 | 1 |
| Electroplaters | 16 | 18 | 2 | 2 | 4 |
| Production Packagers, Hand or Machine | 78 | 87 | 9 | 12 | 21 |
| Tool & Diemakers | 29 | 33 | 4 | 5 | 9 |
| Welders & Flamecutters | 13 | 15 | 2 | 1 | 3 |
| Offset Lithographic Press Operators | 13 | 15 | 2 | 2 | 4 |
| Camera Operators, Printing | 5 | 6 | 1 | 0 | 1 |
| Die Sinkers | 6 | 7 | 1 | 1 | 2 |
| Grinding &/or Abrading Machine Opers., Metal | 5 | 6 | 1 | 0 | 1 |
| Heat Treaters, Annealers, &/or Temperers | 9 | 10 | 1 | 2 | 3 |
| Machine Tool Operators, Toolroom | 6 | 7 | 1 | 1 | 2 |
| Molders, Bench &/or Floor | 23 | 26 | 3 | 3 | 6 |
| Plater Helpers | 13 | 15 | 2 | 1 | 3 |
| Power-Screwdriver Operators | 208 | 239 | 31 | 23 | 54 |
| Painters, Production | 8 | 9 | 1 | 1 | 2 |
| Die Casting Machine Operators & Setters | 60 | 69 | 9 | 7 | 16 |
| Riveters, Heavy | 5 | 6 | 1 | 0 | 1 |
| Punch-Press Operators, Metal | 21 | 24 | 3 | 3 | 6 |
| Coil Winders | 49 | 56 | 7 | 6 | 13 |
| Furnace Operator Helpers or Heater Helpers | 7 | 8 | 1 | 1 | 2 |
| Power Brake &/or Bending Machine Opers.-Metal | 21 | 24 | 3 | 3 | 6 |
| All Assemblers | 170 | 196 | 26 | 29 | 55 |
| All Other Skilled Craft Workers | 130 | 148 | 18 | 17 | 35 |
| All Other Semiskilled Workers | 672 | 734 | 62 | 55 | 117 |
| All Other Laborers & Unskilled Workers | 139 | 156 | 17 | 16 | 33 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

MOHAVE COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL CLERICAL WORKERS | 249 | 281 | 32 | 42 | 74 |
| All Office Machine Operators | 13 | 14 | 1 | 3 | 4 |
| Bookkeepers, Hand | 11 | 12 | 1 | 3 | 4 |
| General Clerks, Office | 32 | 36 | 4 | 8 | 12 |
| Secretaries | 15 | 18 | 3 | 3 | 6 |
| Including Clerk-Typists) | 19 | 22 | 3 | 5 | 8 |
| Shipping P | | | | | |
| Shipping &/or Receiving Clerks | 27 | 31 | 4 | 3 | 7 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 48 | 55 | 7 | 6 | 13 |
| All Other Plant & Clerical Workers | 29 | 32 | 3 | 2 | 5 |
| TOTAL SALES WORKERS | 49 | 57 | 8 | 7 | 15 |
| Sales Reps., Agents, &/or Associates | 44 | 51 | 7 | 6 | 13 |
| All Other Sales Workers | 5 | 6 | 1 | 1 | 2 |
| TOTAL ALL OCCUPATIONS | 2,922 | 3,327 | 405 | 341 | 746 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Other Engineers
Industrial Engineers

TECHNICAL WORKERS

All Engineering Technicians
Electrical & Electronic Technicians

MAINTENANCE & PRODUCTION WORKERS

All Other Skilled Craft Workers
Cabinetmakers
Electricians
Mattress Makers
Sheet Metal Workers
Gem Cutters
Wire Drawers
Upholsterers

All Other Semiskilled Workers
Pressers, Hand (Textiles)
Sewing Machine Opers., Regular Equip.-Garment
Sewing Machine Opers., Reg. Equip.-Nongarment
Coilers, Winders, &/or Spoilers
Cut-Off Saw Operators, Lumber
Drill-Press &/or Boring Machine Operators
Insulating Extruding &/or Lead Press Operators
Machine Tool Operators, Combination
Stranding Machine Operators
Testers

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Other Laborers & Unskilled Workers
Helpers, Trades
Blockmaking-Machine Operators

CLERICAL WORKERS

All Office Machine Operators
Keypunch Operators

All Other Plant Clerical Workers
Production Clerks &/or Coordinators

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

NAVAJO COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 59 | 69 | 10 | 9 | 19 |
| TOTAL PROFESSIONAL WORKERS | 28 | 31 | 3 | 6 | 9 |
| All Engineers | 4 | 4 | 0 | 1 | 1 |
| All Physical Scientists | 2 | 2 | 0 | 1 | 1 |
| Accountants & Auditors | 5 | 6 | 1 | 1 | 2 |
| All Other Professional Workers | 17 | 19 | 2 | 3 | 5 |
| TOTAL TECHNICAL WORKERS | 26 | 32 | 6 | 3 | 9 |
| All Engineering Technicians | 9 | 11 | 2 | 1 | 3 |
| Science Technicians | 11 | 14 | 3 | 1 | 4 |
| All Other Technicians | 6 | 7 | 1 | 1 | 2 |
| TOTAL SERVICE WORKERS | 22 | 26 | 4 | 3 | 7 |
| Janitors, Porters, & Cleaners | 13 | 15 | 2 | 2 | 4 |
| Guards & Doorkeepers | 9 | 11 | 2 | 1 | 3 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 1,099 | 1,287 | 188 | 139 | 327 |
| Mechanics, Automotive | 23 | 28 | 5 | 2 | 7 |
| Mechanics, Maintenance | 36 | 44 | 8 | 4 | 12 |
| All Other Mechanics & Repairers | 32 | 40 | 8 | 3 | 11 |
| Truck Drivers | 69 | 81 | 12 | 5 | 17 |
| Crane, Derrick, & Hoist Operators | 5 | 6 | 1 | 1 | 2 |
| Delivery & Route Workers | 25 | 31 | 6 | 1 | 7 |
| Supervisors, Nonworking | 80 | 95 | 15 | 9 | 24 |
| Heavy Equipment Operators | 24 | 29 | 5 | 3 | 8 |
| Industrial Truck Operators | 29 | 35 | 6 | 3 | 9 |
| Instrument Repairers | 21 | 26 | 5 | 2 | 7 |
| Maintenance Repairers, General Utility | 16 | 20 | 4 | 1 | 5 |
| Order Fillers | 8 | 10 | 2 | 0 | 2 |
| Plumbers &/or Pipefitters | 6 | 7 | 1 | 1 | 2 |
| Production Packagers, Hand or Machine | 11 | 14 | 3 | 1 | 4 |
| Stationary Boiler Firers | 8 | 10 | 2 | 1 | 3 |
| Stationary Engineers | 5 | 6 | 1 | 1 | 2 |
| Logging Tractor Operators | 50 | 59 | 9 | 4 | 13 |
| Back Tenders | 13 | 16 | 3 | 2 | 5 |
| Beaters | 6 | 7 | 1 | 1 | 2 |
| Chain Offbearers, Lumber | 44 | 52 | 8 | 5 | 13 |
| Chemical Operators-B | 7 | 9 | 2 | 1 | 3 |
| Chemical Operator Helpers | 6 | 7 | 1 | 1 | 2 |
| Coater Operators, Off-Machine | 8 | 10 | 2 | 1 | 3 |
| Coating Mixer Tenders (Paper Products) | 6 | 7 | 1 | 1 | 2 |
| Cylinder-Machine Tenders (Paper Products) | 11 | 14 | 3 | 1 | 4 |
| Digester Operators | 6 | 7 | 1 | 1 | 2 |
| Digester Operator Helpers | 5 | 6 | 1 | 1 | 2 |
| Edgers, Automatic &/or Pony | 5 | 6 | 1 | 1 | 2 |
| Evaporator Operators, Papermaking | 5 | 6 | 1 | 1 | 2 |
| Fallers &/or Buckers, Logging | 42 | 49 | 7 | 5 | 12 |
| Fourdrinier-Machine Tenders | 18 | 22 | 4 | 3 | 7 |
| Head Sawyers | 7 | 9 | 2 | 0 | 2 |
| Loaders, Car & Truck (Lumber) | 9 | 11 | 2 | 1 | 3 |
| Log Handling Equipment Operators | 13 | 16 | 3 | 2 | 5 |
| Log Inspectors, Graders, &/or Scalers | 12 | 15 | 3 | 1 | 4 |
| Paper-Reel &/or Rewinder Operators | 9 | 11 | 2 | 1 | 3 |
| Pulpers | 5 | 6 | 1 | 1 | 2 |
| Recovery Operators, Papermaking | 23 | 28 | 5 | 3 | 8 |
| Resawyers | 10 | 12 | 2 | 1 | 3 |
| Supercalender Operators | 7 | 9 | 2 | 0 | 2 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

NAVAJO COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Trim Saw Operators | 19 | 23 | 4 | 2 | 6 |
| Wet-Machine Tenders | 7 | 9 | 2 | 0 | 2 |
| Winders, Paper Machine | 12 | 15 | 3 | 1 | 4 |
| Brown-Stock Washers &/or Blow-Pit Operators | 6 | 7 | 1 | 1 | 2 |
| Fourth &/or Fifth Hands, Paper Machine | 8 | 10 | 2 | 1 | 3 |
| Planer Operators | 10 | 12 | 2 | 1 | 3 |
| Batch Plant Operators, Concrete | 6 | 7 | 1 | 1 | 2 |
| All Other Skilled Craft Workers | 89 | 93 | 4 | 15 | 19 |
| All Other Semiskilled Workers | 91 | 97 | 6 | 13 | 19 |
| All Other Laborers & Unskilled Workers | 126 | 138 | 12 | 27 | 39 |
| TOTAL CLERICAL WORKERS | | | | | 0 |
| All Other Office Machine Operators | 2 | 2 | 0 | 0 | 0 |
| Accounting Clerks | 11 | 14 | 3 | 2 | 5 |
| Bookkeepers, Hand | 10 | 12 | 2 | 2 | 4 |
| General Clerks, Office | 20 | 24 | 4 | 5 | 9 |
| Secretaries | 20 | 25 | 5 | 4 | 9 |
| All Other Office Clerical Workers | 13 | 15 | 2 | 5 | 7 |
| Shipping &/or Receiving Clerks | 6 | 7 | 1 | 1 | 2 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 9 | 11 | 2 | 1 | 3 |
| All Other Plant Clerical Workers | 6 | 7 | 1 | 0 | 1 |
| TOTAL SALES WORKERS | 29 | 34 | 5 | 5 | 10 |
| Sales Reps., Agents, &/or Associates | 27 | 32 | 5 | 4 | 9 |
| All Other Sales Workers | 2 | 2 | 0 | 1 | 1 |
| TOTAL ALL OCCUPATIONS | 1,360 | 1,596 | 236 | 185 | 421 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

MAINTENANCE & PRODUCTION WORKERS

All Other Mechanics & Repairers
- Engineering Equipment Mechanics
- Coin/Vending Machine Servicers

All Other Skilled Craft Workers
- Carpenters
- Electricians
- Jewelers &/or Silversmiths
- Millwrights
- Camera Operators, Printing

All Other Semiskilled Workers
- Cut-Off Saw Operators, Lumber
- Gluing-Machine Operators
- Ripsaw Operators
- Testers
- Woodworking-Machine Operators

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Other Laborers & Unskilled Workers
- Helpers, Trades
- Oilers
- Blockmaking-Machine Operators
- Choker Setters, Lumber
- Lumber Straighteners

CLERICAL WORKERS

All Other Office Clerical Workers
- Receptionists

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

PIMA COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 1,643 | 2,578 | 935 | 262 | 1,197 |
| TOTAL PROFESSIONAL WORKERS | 2,826 | 4,958 | 2,132 | 297 | 2,429 |
| Electrical & Electronic Engineers | 642 | 1,360 | 718 | 47 | 765 |
| Industrial Engineers | 408 | 809 | 401 | 38 | 439 |
| Mechanical Engineers | 47 | 67 | 20 | 3 | 23 |
| All Other Engineers | 577 | 830 | 253 | 45 | 298 |
| All Mathematical Scientists | 5 | 7 | 2 | 1 | 3 |
| Chemists | 15 | 17 | 2 | 2 | 4 |
| All Social Scientists | 1 | 1 | 0 | 0 | 0 |
| Systems Analysts, Business | 23 | 35 | 12 | 1 | 13 |
| Photographers | 20 | 23 | 3 | 2 | 5 |
| Purchasing Agents &/or Buyers | 179 | 288 | 109 | 27 | 136 |
| Accountants & Auditors | 147 | 238 | 91 | 25 | 116 |
| Commercial Artists | 57 | 78 | 21 | 11 | 32 |
| Cost Estimators | 14 | 18 | 4 | 3 | 7 |
| Writers &/or Editors | 114 | 148 | 34 | 21 | 55 |
| Personnel & Labor Relations Specialists | 74 | 131 | 57 | 10 | 67 |
| Reporters &/or Correspondents | 104 | 118 | 14 | 19 | 33 |
| Designers | 103 | 178 | 75 | 10 | 85 |
| All Other Professional Workers | 296 | 612 | 316 | 32 | 348 |
| TOTAL TECHNICAL WORKERS | 1,291 | 2,362 | 1,071 | 104 | 1,175 |
| Computer Programmers | 9 | 10 | 1 | 0 | 1 |
| Computer Programmers, Business | 53 | 78 | 25 | 3 | 28 |
| Computer Programmers, Scientific & Technical | 290 | 633 | 343 | 18 | 361 |
| Drafters | 91 | 140 | 49 | 8 | 57 |
| Electrical & Electronic Technicians | 479 | 811 | 332 | 32 | 364 |
| Mechanical Engineering Technicians | 30 | 45 | 15 | 1 | 16 |
| Tool Programmers, Numerical Control | 5 | 9 | 4 | 0 | 4 |
| Industrial Engineering Technicians | 19 | 27 | 8 | 2 | 10 |
| All Other Engineering Technicians | 269 | 545 | 276 | 35 | 311 |
| Science Technicians | 20 | 27 | 7 | 2 | 9 |
| All Other Technicians | 26 | 37 | 11 | 3 | 14 |
| TOTAL SERVICE WORKERS | 351 | 500 | 149 | 58 | 207 |
| Janitors, Porters, & Cleaners | 196 | 261 | 65 | 38 | 103 |
| Guards & Doorkeepers | 85 | 118 | 33 | 5 | 38 |
| Food Service Workers (Exc. Cashiers) | 22 | 32 | 10 | 5 | 15 |
| Supervisors, Nonworking--Service Only | 17 | 25 | 8 | 2 | 10 |
| All Other Service Workers | 31 | 64 | 33 | 8 | 41 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 11,625 | 16,342 | 4,717 | 1,652 | 6,369 |
| Mechanics, Automotive | 75 | 92 | 17 | 7 | 24 |
| Engineering-Equipment Mechanics | 8 | 10 | 2 | 0 | 2 |
| Mechanics, Maintenance | 114 | 146 | 32 | 11 | 43 |
| Coin-Machine Service &/or Vending Machine Repairers | 29 | 29 | 0 | 3 | 3 |
| All Other Mechanics & Repairers | 148 | 209 | 61 | 10 | 71 |
| Truck Drivers | 284 | 334 | 50 | 21 | 71 |
| Cabinetmakers | 63 | 82 | 19 | 6 | 25 |
| Carpenters | 43 | 60 | 17 | 6 | 23 |
| Cooks &/or Cookers | 12 | 12 | 0 | 2 | 2 |
| Crane, Derrick, & Hoist Operators | 29 | 32 | 3 | 3 | 6 |
| Delivery & Route Workers | 409 | 445 | 36 | 28 | 64 |
| Electricians | 64 | 89 | 25 | 7 | 32 |
| Filers, Grinders, & Buffers (Exc. Lens) | 57 | 78 | 21 | 5 | 26 |
| Supervisors, Nonworking | 640 | 884 | 244 | 77 | 321 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

PIMA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Heavy Equipment Operators | 17 | 20 | 3 | 1 | 4 |
| Industrial Truck Operators | 99 | 123 | 24 | 7 | 31 |
| Inspectors | 595 | 896 | 301 | 95 | 396 |
| Instrument Repairers | 22 | 33 | 11 | 3 | 14 |
| Jewelers &/or Silversmiths | 15 | 21 | 6 | 3 | 9 |
| Laminating-Machine Operators, Furniture | 9 | 13 | 4 | 1 | 5 |
| Machinists | 185 | 306 | 121 | 22 | 143 |
| Maintenance Repairers, General Utility | 139 | 204 | 65 | 14 | 79 |
| Helpers, Trades | 237 | 272 | 35 | 27 | 62 |
| Mixers | 46 | 46 | 0 | 6 | 6 |
| Oilers | 24 | 30 | 6 | 3 | 9 |
| Order Fillers | 23 | 33 | 10 | 2 | 12 |
| Painters, Maintenance | 21 | 27 | 6 | 3 | 9 |
| Panelboard Operators | 25 | 31 | 6 | 3 | 9 |
| Electroplaters | 45 | 61 | 16 | 5 | 21 |
| Production Packagers, Hand or Machine | 199 | 234 | 35 | 32 | 67 |
| Sewing Mach. Opers., Regular Equip.-Garment | 85 | 85 | 0 | 11 | 11 |
| Sewing Mach. Opers., Special Equip.-Garment | 32 | 34 | 2 | 4 | 6 |
| Sewing Mach. Opers., Reg. Equip.-Nongarment | 58 | 68 | 10 | 8 | 18 |
| Sewing Mach. Opers., Spec. &/or Auto Equip.-Nongarment | 11 | 12 | 1 | 1 | 2 |
| Sheet Metal Workers | 135 | 171 | 36 | 10 | 46 |
| Tool & Diemakers | 108 | 184 | 76 | 19 | 95 |
| Welders & Flamecutters | 298 | 378 | 80 | 36 | 116 |
| Offset Lithographic Press Operators | 150 | 171 | 21 | 24 | 45 |
| Platemakers | 23 | 26 | 3 | 4 | 7 |
| Strippers (Printing & Publishing) | 19 | 22 | 3 | 1 | 4 |
| Camera Operators, Printing | 28 | 32 | 4 | 1 | 5 |
| Bakers | 11 | 11 | 0 | 2 | 2 |
| Blockmaking-Machine Operators | 48 | 57 | 9 | 7 | 16 |
| Concrete Stone Fabricators | 11 | 13 | 2 | 1 | 3 |
| Die Cutters &/or Clicking-Machine Opers. | 37 | 40 | 3 | 5 | 8 |
| Dividing &/or Dough-Brake Mach. Opers. | 14 | 14 | 0 | 2 | 2 |
| Drill-Press &/or Boring Machine Operators | 38 | 66 | 28 | 5 | 33 |
| Etchers &/or Engravers | 8 | 13 | 5 | 1 | 6 |
| Fabricators, Plastics | 21 | 27 | 6 | 2 | 8 |
| Grinding &/or Abrading Machine Opers., Metal | 52 | 97 | 45 | 8 | 53 |
| Lathe &/or Turning Machine Operators, Metal | 54 | 106 | 52 | 8 | 60 |
| Lay-Out Markers, Metal | 42 | 42 | 0 | 5 | 5 |
| Machine Tool Operators, Combination | 170 | 264 | 94 | 26 | 120 |
| Machine Tool Operators, Numerical-Control | 63 | 133 | 70 | 11 | 81 |
| Machine Tool Setters, Metalworking | 81 | 113 | 32 | 8 | 40 |
| Milling &/or Planing Machine Operators | 20 | 35 | 15 | 3 | 18 |
| Wood Machinists | 74 | 101 | 27 | 9 | 36 |
| Plastic-Top Installers | 7 | 10 | 3 | 1 | 4 |
| Plater Helpers | 18 | 22 | 4 | 2 | 6 |
| Stitchers, Utility | 6 | 6 | 0 | 1 | 1 |
| Testers | 291 | 463 | 172 | 37 | 209 |
| Woodworking-Machine Operators | 19 | 26 | 7 | 3 | 10 |
| Painters, Production | 112 | 142 | 30 | 13 | 43 |
| Punch-Press Operators, Metal | 57 | 64 | 7 | 6 | 13 |
| Compression &/or Injection-Molding Machine Operators, Plastics | 19 | 22 | 3 | 2 | 5 |
| Fitters, Structural Metal | 18 | 18 | 0 | 0 | 0 |
| Cutters, Hand | 20 | 21 | 1 | 2 | 3 |
| Power Brake &/or Bending Mach. Opers.-Metal | 35 | 41 | 6 | 5 | 11 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

PIMA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Mill &/or Grinder Operators, Minerals | 14 | 17 | 3 | 1 | 4 |
| Hand Compositors | 21 | 24 | 3 | 3 | 6 |
| Linecasting Machine Operators | 7 | 8 | 1 | 1 | 2 |
| Linecasting-Machine Keyboard Operators | 5 | 6 | 1 | 1 | 2 |
| Pasteup Men/Women | 60 | 68 | 8 | 7 | 15 |
| Phototypesetter Operators | 42 | 48 | 6 | 6 | 12 |
| Proofreaders, Composed Copy | 14 | 16 | 2 | 3 | 5 |
| Letter Press Opers., Sheet, Roll, or Web Fed | 36 | 41 | 5 | 3 | 8 |
| Press Assistants & Feeders | 12 | 14 | 2 | 1 | 3 |
| Mailers | 20 | 23 | 3 | 3 | 6 |
| Food Shapers, Hand | 28 | 28 | 0 | 5 | 5 |
| Gluers &/or Cementers, Hand | 6 | 8 | 2 | 1 | 3 |
| Screen or Stencil Printers &/or Setters (Printing) | 9 | 14 | 5 | 2 | 7 |
| Bookbinders, Hand | 8 | 9 | 1 | 2 | 3 |
| Bookbinders, Machine | 22 | 25 | 3 | 4 | 7 |
| Bindery Workers, Assembly | 17 | 19 | 2 | 2 | 4 |
| Bindery Workers, Stitching | 13 | 15 | 2 | 1 | 3 |
| All Other Bindery Workers | 4 | 5 | 1 | 0 | 1 |
| Extruder Operators, Plastics or Rubber | 53 | 57 | 4 | 7 | 11 |
| Extruder Oper. Helpers, Plastics or Rubber | 16 | 17 | 1 | 2 | 3 |
| Assemblers | 207 | 242 | 35 | 39 | 74 |
| Machine Assemblers | 21 | 46 | 25 | 2 | 27 |
| Electro-Mechanical Equipment Assemblers | 481 | 972 | 491 | 111 | 602 |
| Electrical & Electronic Assemblers | 1,340 | 2,332 | 992 | 292 | 1,284 |
| All Other Assemblers | 773 | 1,228 | 455 | 163 | 618 |
| Furnace, Kiln, Drier, or Oven Opers./Tenders | 28 | 33 | 5 | 4 | 9 |
| Batch Plant Operators, Concrete | 14 | 17 | 3 | 1 | 4 |
| Mixers &/or Blenders, Chemicals & Chem. Prods. | 38 | 43 | 5 | 4 | 9 |
| All Other Skilled Craft Workers | 676 | 906 | 230 | 81 | 311 |
| All Other Semiskilled Workers | 596 | 715 | 119 | 131 | 250 |
| All Other Laborers & Unskilled Workers | 1,075 | 1,344 | 269 | 62 | 331 |
| TOTAL CLERICAL WORKERS | 3,141 | 4,873 | 1,732 | 631 | 2,363 |
| Bookkeeping &/or Billing Machine Operators | 11 | 13 | 2 | 2 | 4 |
| Computer Operators | 107 | 192 | 85 | 14 | 99 |
| Keypunch Operators | 47 | 70 | 23 | 11 | 34 |
| Peripheral EDP Equipment Operators | 9 | 15 | 6 | 2 | 8 |
| All Other Office Machine Operators | 61 | 86 | 25 | 16 | 41 |
| Stenographers | 10 | 15 | 5 | 2 | 7 |
| Accounting Clerks | 116 | 184 | 68 | 26 | 94 |
| Bookkeepers, Hand | 125 | 163 | 38 | 26 | 64 |
| File Clerks | 51 | 72 | 21 | 15 | 36 |
| General Clerks, Office | 470 | 733 | 263 | 113 | 376 |
| Order Clerks | 48 | 64 | 16 | 10 | 26 |
| Payroll &/or Timekeeping Clerks | 25 | 29 | 4 | 5 | 9 |
| Personnel Clerks | 35 | 47 | 12 | 10 | 22 |
| Procurement Clerks | 49 | 71 | 22 | 6 | 28 |
| Receptionists | 20 | 28 | 8 | 5 | 13 |
| Secretaries | 384 | 604 | 220 | 99 | 319 |
| Statistical Clerks | 9 | 12 | 3 | 2 | 5 |
| Switchboard Operators | 24 | 31 | 7 | 7 | 14 |
| Switchboard Operators/Receptionists | 25 | 33 | 8 | 7 | 15 |
| Typists (Including Clerk-Typists) | 82 | 108 | 26 | 22 | 48 |
| Clerical Supervisors, Office or Plant | 27 | 33 | 6 | 3 | 9 |
| Telephone Ad-Takers, Newspaper | 48 | 55 | 7 | 10 | 17 |
| All Other Office Clerical Workers | 221 | 358 | 137 | 55 | 192 |
| Production Clerks &/or Coordinators | 344 | 574 | 230 | 43 | 273 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

PIMA COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Shipping Packers | 107 | 155 | 48 | 13 | 61 |
| Shipping &/or Receiving Clerks | 108 | 142 | 34 | 10 | 44 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 366 | 615 | 249 | 48 | 297 |
| Dispatchers, Vehicle, Service or Work | 19 | 23 | 4 | 2 | 6 |
| All Other Plant Clerical Workers | 193 | 348 | 155 | 47 | 202 |
| TOTAL SALES WORKERS | 440 | 533 | 93 | 57 | 150 |
| Sales Reps., Agents, &/or Associates | 377 | 461 | 84 | 50 | 134 |
| Sales Clerks (Excluding Cashiers) | 59 | 67 | 8 | 7 | 15 |
| All Other Sales Workers | 4 | 5 | 1 | 0 | 1 |
| TOTAL ALL OCCUPATIONS | 21,317 | 32,146 | 10,829 | 3,061 | 13,890 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Other Engineers
- Aeronautical Engineers
- Metal Engineers

All Other Professional Workers
- Systems Analysts, Scientific & Technical
- Librarians, Professional
- Nurses, Professional

MAINTENANCE & PRODUCTION WORKERS

All Other Mechanics & Repairers
- Mechanics, Aircraft
- Electric Motor Repairers

All Other Skilled Craft Workers
- Glaziers
- Lens Grinders (Exc. Ophthalmic Lens Grinders)
- Metal Fabricators (Exc. Sheet Metal Workers)
- Oven Operators
- Plumbers &/or Pipefitters
- Opticians, Dispensing &/or Optical Mechanics
- Butchers, All-Around
- Dairy Processing Equipment Operators
- Heat Treaters, Annealers, &/or Temperers
- Hose Makers
- Lasting-Machine Operators, Hand Method
- Millers (Food & Kindred)
- Wirers, Electronic
- Furnace Operator &/or Cupola Tender
- Phototypesetting-Machine-Keyboard Operators

All Other Semiskilled Workers
- Pressers, Machine (Textiles, Exc. Laundry)
- Bias Machine Operators
- Boners, Meat
- Concrete-Pipe Makers
- Machine Tool Operators, Toolroom
- Nailing-Machine Operators
- Presser &/or Expeller Operators

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)
- Sanders, Wood
- Shoe Parts Sewers, Hand
- Side Lasters (Shoes)
- Skinners, Animal
- Stitchers, Standard Machine
- Vulcanizers, Rubber Plate
- Press Tenders, Rubber Goods
- Conveyor Opers. or Tenders (Exc. Feeder & Loader)
- Mixers, Stone, Clay, Glass, & Related Products
- Cutting Machine Operators, Food
- Drier Operators, Chem., Plastic Resins, & Rubber
- Cementers, Pasters, Backers, or Fitters, Hand (Shoes)
- Planer Operators
- Calender Operators, Plastics or Rubber
- Tappers, Metal
- Pump Operators
- Laminators, Preforms

All Other Laborers & Unskilled Workers
- Skivers
- Baker Helpers
- Hose Loaders
- Meat Grinders
- Rubber Goods Cutters & Finishers
- Strippers (Rubber & Rubber Products)
- Stunners
- Encapsulators
- Coil Finishers
- Precipitator Operators
- Scrap Sorters
- Weighers, Production
- Calender Operator Helpers, Plastics or Rubber

CLERICAL WORKERS

All Other Office Machine Operators
- Addressing Machine Operators

All Other Office Clerical Workers
- Cashiers
- Classified-Ad Clerks, Newspaper
- Customer Service Reps., Printing & Publishing

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

PINAL COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 103 | 118 | 15 | 15 | 30 |
| TOTAL PROFESSIONAL WORKERS | 93 | 106 | 13 | 8 | 21 |
| Industrial Engineers | 5 | 6 | 1 | 0 | 1 |
| Mechanical Engineers | 10 | 12 | 2 | 0 | 2 |
| All Other Engineers | 14 | 16 | 2 | 0 | 2 |
| Chemists | 6 | 7 | 1 | 1 | 2 |
| All Natural & Mathematical Scientists | 4 | 5 | 1 | 0 | 1 |
| Purchasing Agents &/or Buyers | 9 | 10 | 1 | 2 | 3 |
| Personnel & Labor Relations Specialists | 5 | 6 | 1 | 0 | 1 |
| All Other Professional Workers | 40 | 44 | 4 | 5 | 9 |
| TOTAL TECHNICAL WORKERS | 16 | 18 | 2 | 1 | 3 |
| All Engineering Technicians | 14 | 16 | 2 | 1 | 3 |
| All Science Technicians | 2 | 2 | 0 | 0 | 0 |
| TOTAL SERVICE WORKERS | 26 | 30 | 4 | 3 | 7 |
| Janitors, Porters, & Cleaners | 18 | 20 | 2 | 3 | 5 |
| All Guards & Doorkeepers | 3 | 4 | 1 | 0 | 1 |
| All Food Service Workers | 4 | 5 | 1 | 0 | 1 |
| All Other Service Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 2,081 | 2,316 | 235 | 178 | 413 |
| Mechanics, Automotive | 23 | 26 | 3 | 2 | 5 |
| Mechanics, Maintenance | 15 | 18 | 3 | 1 | 4 |
| All Other Mechanics & Repairers | 6 | 6 | 0 | 2 | 2 |
| Truck Drivers | 55 | 64 | 9 | 5 | 14 |
| Carpenters | 18 | 21 | 3 | 2 | 5 |
| Delivery & Route Workers | 6 | 7 | 1 | 1 | 2 |
| Electricians | 37 | 43 | 6 | 3 | 9 |
| Supervisors, Nonworking | 121 | 138 | 17 | 14 | 31 |
| Industrial Truck Operators | 26 | 31 | 5 | 2 | 7 |
| Inspectors | 26 | 28 | 2 | 4 | 6 |
| Machinists | 56 | 64 | 8 | 6 | 14 |
| Maintenance Repairers, General Utility | 54 | 63 | 9 | 5 | 14 |
| Helpers, Trades | 69 | 82 | 13 | 8 | 21 |
| Oilers | 12 | 14 | 2 | 1 | 3 |
| Plumbers &/or Pipefitters | 40 | 46 | 6 | 4 | 10 |
| Production Packagers, Hand or Machine | 59 | 68 | 9 | 10 | 19 |
| Sewing Machine Opers., Regular Equip.-Garment | 180 | 191 | 11 | 24 | 35 |
| Welders & Flamecutters | 36 | 42 | 6 | 4 | 10 |
| Spreaders (Textiles & Textile Products) | 11 | 12 | 1 | 1 | 2 |
| Phototypesetter Operators | 8 | 9 | 1 | 1 | 2 |
| Assemblers | 42 | 51 | 9 | 9 | 18 |
| All Other Assemblers | 4 | 4 | 0 | 0 | 0 |
| All Other Skilled Craft Workers | 299 | 337 | 38 | 9 | 47 |
| All Other Semiskilled Workers | 662 | 710 | 48 | 34 | 82 |
| All Other Laborers & Unskilled Workers | 216 | 241 | 25 | 26 | 51 |
| TOTAL CLERICAL WORKERS | 236 | 275 | 39 | 38 | 77 |
| All Office Machine Operators | 7 | 9 | 2 | 0 | 2 |
| Accounting Clerks | 19 | 22 | 3 | 4 | 7 |
| Bookkeepers, Hand | 11 | 13 | 2 | 2 | 4 |
| General Clerks, Office | 22 | 25 | 3 | 5 | 8 |
| Order Clerks | 7 | 8 | 1 | 2 | 3 |
| Payroll &/or Timekeeping Clerks | 8 | 9 | 1 | 1 | 2 |
| Receptionists | 5 | 6 | 1 | 1 | 2 |
| Secretaries | 15 | 17 | 2 | 4 | 6 |
| Clerical Supervisors, Office or Plant | 9 | 10 | 1 | 1 | 2 |
| All Other Office Clerical Workers | 21 | 23 | 2 | 6 | 8 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

PINAL COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| Production Clerks &/or Coordinators | 7 | 8 | 1 | 1 | 2 |
| Shipping Packers | 22 | 25 | 3 | 2 | 5 |
| Shipping &/or Receiving Clerks | 21 | 25 | 4 | 2 | 6 |
| Weighers, Record keeping | 10 | 12 | 2 | 1 | 3 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 52 | 63 | 11 | 6 | 17 |
| TOTAL SALES WORKERS | 34 | 40 | 6 | 4 | 10 |
| Sales Reps., Agents, &/or Associates | 30 | 35 | 5 | 4 | 9 |
| All Other Sales Workers | 4 | 5 | 1 | 0 | 1 |
| TOTAL ALL OCCUPATIONS | 2,589 | 2,903 | 314 | 247 | 561 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Other Engineers
Metal Engineers

All Other Professional Workers
Writers &/or Editors
Reporters &/or Correspondents

MAINTENANCE & PRODUCTION WORKERS

All Other Skilled Craft Workers
Boilermakers
Cabinetmakers
Instrument Repairers
Stationary Engineers
Offset Lithographic Press Operators
Millers (Food & Kindred)
Coil Winders
Furnace Operators &/or Cupola Tenders
Upholsterers

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Other Semiskilled Workers
Pressers, Machine (Textiles, Exc. Laundry)
Crane, Derrick, & Hoist Operators
Heavy Equipment Operators
Refractory Materials Repairers
Sewing Machine Opers., Reg. Equip.-Nongarment
Bundlers (Textiles & Textile Products)
Casters, Finished or Semi-Finished Products
Dust Operators &/or Ore Crushing Dust Collectors
Grinding &/or Abrading Machine Operators, Metal
Leather Workers
Pot Tenders (Smelting)
Punch-Press Operators, Metal
Conveyor Opers. or Tenders (Exc. Feeders & Loaders)
Furnace Chargers
Folders, Hand (Textiles & Textile Products)
Mailers
Cutters, Machine (Leather, Paper, & Textiles)

All Other Laborers & Unskilled Workers
Furnace Operator Helpers or Heater Helpers

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

SANTA CRUZ COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 94 | 112 | 18 | 13 | 31 |
| TOTAL PROFESSIONAL WORKERS | 53 | 61 | 8 | 7 | 15 |
| Industrial Engineers | 5 | 6 | 1 | 0 | 1 |
| All Other Engineers | 5 | 6 | 1 | 0 | 1 |
| Purchasing Agents &/or Buyers | 11 | 13 | 2 | 1 | 3 |
| Accountants & Auditors | 13 | 16 | 3 | 2 | 5 |
| All Other Professional Workers | 19 | 20 | 1 | 4 | 5 |
| TOTAL TECHNICAL WORKERS | 10 | 12 | 2 | 0 | 2 |
| All Engineering Technicians | 10 | 12 | 2 | 0 | 2 |
| TOTAL SERVICE WORKERS | 21 | 23 | 2 | 2 | 4 |
| Janitors, Porters, & Cleaners | 16 | 18 | 2 | 2 | 4 |
| All Guards & Doorkeepers | 4 | 4 | 0 | 0 | 0 |
| All Service Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 799 | 899 | 100 | 129 | 229 |
| All Mechanics & Repairers | 12 | 12 | 0 | 2 | 2 |
| Delivery & Route Workers | 6 | 7 | 1 | 1 | 2 |
| Supervisors, Nonworking | 34 | 39 | 5 | 3 | 8 |
| Inspectors | 36 | 40 | 4 | 4 | 8 |
| Maintenance Repairers, General Utility | 11 | 13 | 2 | 1 | 3 |
| Production Packagers, Hand or Machine | 16 | 20 | 4 | 2 | 6 |
| Sewing Machine Opers., Regular Equip.-Garment | 83 | 88 | 5 | 11 | 16 |
| Tool & Diemakers | 15 | 18 | 3 | 2 | 5 |
| Offset Lithographic Press Operators | 7 | 8 | 1 | 1 | 2 |
| Pattern Cutters | 22 | 23 | 1 | 3 | 4 |
| Shapers & Pressers (Garments) | 6 | 6 | 0 | 1 | 1 |
| Spreaders (Textiles & Textile Prods.) | 8 | 8 | 0 | 2 | 2 |
| Testers | 7 | 9 | 2 | 0 | 2 |
| All Assemblers | 160 | 201 | 41 | 32 | 73 |
| All Other Skilled Craft Workers | 36 | 41 | 5 | 9 | 14 |
| All Other Semiskilled Workers | 309 | 331 | 22 | 51 | 73 |
| All Other Laborers & Unskilled Workers | 31 | 35 | 4 | 4 | 8 |
| TOTAL CLERICAL WORKERS | 128 | 150 | 22 | 25 | 47 |
| Keypunch Operators | 7 | 8 | 1 | 2 | 3 |
| All Other Office Machine Operators | 3 | 4 | 1 | 2 | 3 |
| Accounting Clerks | 12 | 14 | 2 | 3 | 5 |
| General Clerks, Office | 16 | 18 | 2 | 3 | 5 |
| Payroll &/or Timekeeping Clerks | 5 | 6 | 1 | 1 | 2 |
| Secretaries | 17 | 20 | 3 | 5 | 8 |
| All Other Office Clerical Workers | 28 | 33 | 5 | 6 | 11 |
| Production Clerks &/or Coordinators | 9 | 11 | 2 | 1 | 3 |
| Shipping &/or Receiving Clerks | 15 | 18 | 3 | 1 | 4 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 7 | 8 | 1 | 1 | 2 |
| All Other Plant Clerical Workers | 9 | 10 | 1 | 0 | 1 |
| TOTAL SALES WORKERS | 9 | 10 | 1 | 0 | 1 |
| All Sales Workers | 9 | 10 | 1 | 0 | 1 |
| TOTAL ALL OCCUPATIONS | 1,114 | 1,267 | 153 | 176 | 329 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

SANTA CRUZ COUNTY (CONT'D.)

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Other Professional Workers
Writers &/or Editors

MAINTENANCE & PRODUCTION WORKERS

All Other Skilled Craft Workers
Machine Tool Setters, Metalworking
Coil Winders

All Other Semiskilled Workers
Pressers, Machine (Textiles, Exc. Laundry)
Truck Drivers
Industrial Truck Operators
Sewing Machine Opers., Special Equip.-Garment
Bundlers (Textiles & Textile Products)
Fusing Machine Operators
Machine Tool Operators, Combination
Punch-Press Operators, Metal
Punch-Press Setters, Metal

All Other Laborers & Unskilled Workers
Work Distributors (Garments)

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Assemblers
Assemblers
Machine Assemblers
Electro-Mechanical Equipment Assemblers

CLERICAL WORKERS

All Other Office Machine Operators
Computer Operators

All Other Office Clerical Workers
Typists (Including Clerk-Typists)

All Other Plant Clerical Workers,
Shipping Packers

SALES WORKERS

All Sales Workers
Sales Reps., Agents, &/or Associates

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

YAVAPAI COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 98 | 113 | 15 | 15 | 30 |
| TOTAL PROFESSIONAL WORKERS | 75 | 85 | 10 | 11 | 21 |
| Electrical & Electronic Engineers | 20 | 23 | 3 | 1 | 4 |
| Mechanical Engineers | 18 | 21 | 3 | 1 | 4 |
| All Other Engineers | 7 | 8 | 1 | 1 | 2 |
| All Physical Scientists | 2 | 2 | 0 | 1 | 1 |
| Purchasing Agents &/or Buyers | 5 | 6 | 1 | 1 | 2 |
| Writers &/or Editors | 8 | 9 | 1 | 2 | 3 |
| All Other Professional Workers | 15 | 16 | 1 | 4 | 5 |
| TOTAL TECHNICAL WORKERS | 26 | 29 | 3 | 2 | 5 |
| Drafters | 17 | 19 | 2 | 2 | 4 |
| All Other Engineering Technicians | 8 | 9 | 1 | 0 | 1 |
| All Science Technicians | 1 | 1 | 0 | 0 | 0 |
| TOTAL SERVICE WORKERS | 6 | 7 | 1 | 0 | 1 |
| Janitors, Porters, & Cleaners | 5 | 6 | 1 | 0 | 1 |
| All Other Service Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 996 | 1,134 | 138 | 87 | 225 |
| Mechanics, Automotive | 13 | 15 | 2 | 1 | 3 |
| Mechanics, Maintenance | 10 | 12 | 2 | 1 | 3 |
| All Other Mechanics & Repairers | 7 | 8 | 1 | 0 | 1 |
| Truck Drivers | 52 | 59 | 7 | 4 | 11 |
| Delivery & Route Workers | 33 | 38 | 5 | 2 | 7 |
| Supervisors, Nonworking | 59 | 68 | 9 | 7 | 16 |
| Heavy Equipment Operators | 13 | 15 | 2 | 1 | 3 |
| Industrial Truck Operators | 38 | 45 | 7 | 3 | 10 |
| Inspectors | 21 | 26 | 5 | 4 | 9 |
| Machinists | 42 | 48 | 6 | 5 | 11 |
| Maintenance Repairers, General Utility | 44 | 49 | 5 | 4 | 9 |
| Oilers | 16 | 19 | 3 | 2 | 5 |
| Production Packagers, Hand or Machine | 17 | 19 | 2 | 3 | 5 |
| Offset Lithographic Press Operators | 10 | 11 | 1 | 2 | 3 |
| Camera Operators, Printing | 6 | 7 | 1 | 0 | 1 |
| Grinding &/or Abrading Machine Operators, Metal | 7 | 8 | 1 | 1 | 2 |
| Lathe &/or Turning Machine Operators, Metal | 27 | 32 | 5 | 4 | 9 |
| Milling &/or Planing Machine Operators | 7 | 8 | 1 | 1 | 2 |
| Testers | 11 | 13 | 2 | 1 | 3 |
| Die Casting Machine Operators & Setters | 5 | 6 | 1 | 1 | 2 |
| Punch-Press Setters, Metal | 5 | 6 | 1 | 0 | 1 |
| Letter Press Opers., Sheet, Roll, or Web Fed | 5 | 6 | 1 | 0 | 1 |
| Machine Assemblers | 11 | 13 | 2 | 1 | 3 |
| All Other Assemblers | 65 | 76 | 11 | 12 | 23 |
| All Other Skilled Craft Workers | 119 | 132 | 13 | 15 | 28 |
| All Other Semiskilled Workers | 277 | 310 | 33 | 7 | 40 |
| All Other Laborers & Unskilled Workers | 76 | 85 | 9 | 5 | 14 |
| TOTAL CLERICAL WORKERS | 154 | 176 | 22 | 30 | 52 |
| All Office Machine Operators | 1 | 1 | 0 | 0 | 0 |
| Accounting Clerks | 11 | 13 | 2 | 2 | 4 |
| Bookkeepers, Hand | 14 | 16 | 2 | 3 | 5 |
| General Clerks, Office | 25 | 28 | 3 | 6 | 9 |
| Secretaries | 29 | 33 | 4 | 7 | 11 |
| Typists (Including Clerk-Typists) | 11 | 13 | 2 | 3 | 5 |
| All Other Office Clerical Workers | 13 | 15 | 2 | 3 | 5 |
| Shipping &/or Receiving Clerks | 5 | 6 | 1 | 1 | 2 |
| Stock Clerks, Stockroom, Warehouse, or Storage Yard | 24 | 27 | 3 | 3 | 6 |
| All Other Plant Clerical Workers | 21 | 24 | 3 | 2 | 5 |

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

YAVAPAI COUNTY (CONT'D.)

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL SALES WORKERS | 30 | 35 | 5 | 3 | 8 |
| Sales Reps., Agents, &/or Associates | 30 | 35 | 5 | 3 | 8 |
| TOTAL ALL OCCUPATIONS | 1,385 | 1,579 | 194 | 148 | 342 |

Confidential data for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Other Engineers
Industrial Engineers

All Other Professional Workers
Reporters &/or Correspondents

All Other Engineering Technicians
Electrical & Electronic Technicians

MAINTENANCE & PRODUCTIONS WORKERS

All Other Assemblers
Electrical & Electronic Assemblers
Assemblers

All Other Skilled Craft Workers
Cabinetmakers
Electricians
Sheet Metal Workers
Hand Compositors
Linecasting-Machine Keyboard Operators
Furnace, Kiln, Drier, or Oven Opers./Tenders

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Other Semiskilled Workers
Sewing Mach. Opers., Regular Equip.-Garment
Sewing Mach. Opers., Special Equip.-Garment
Welders & Flamecutters
Drill-Press &/or Boring-Machine Operators
Machine Tool Operators, Combination
Splitters, Stone
Punch-Press Operators, Metal
Blow-Molding Machine Operators

All Other Laborers & Unskilled Workers
Blockmaking-Machine Operators

CLERICAL WORKERS

All Other Office Clerical Workers
Clerical Supervisors, Office or Plant

All Other Plant Clerical Workers
Production Clerks &/or Coordinators

CUPRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

YUMA COUNTY

| | Estimated 1980 Employment | Projected 1984 Employment | Job Openings Due to Growth 1980-1984 | Job Openings Due to Separations 1980-1984 | Total Job Openings 1980-1984 |
|---|---|---|---|---|---|
| TOTAL MANAGERS & OFFICERS | 111 | 153 | 42 | 17 | 59 |
| TOTAL PROFESSIONAL WORKERS | 99 | 149 | 50 | 12 | 62 |
| All Engineers | 57 | 99 | 42 | 4 | 46 |
| Purchasing Agents &/or Buyers | 9 | 14 | 5 | 2 | 7 |
| All Other Professional Workers | 33 | 36 | 3 | 6 | 9 |
| TOTAL TECHNICAL WORKERS | 15 | 25 | 10 | 1 | 11 |
| TOTAL SERVICE WORKERS | 22 | 24 | 2 | 4 | 6 |
| Janitors, Porters, & Cleaners | 9 | 10 | 1 | 2 | 3 |
| All Guards & Doorkeepers | 3 | 3 | 0 | 1 | 1 |
| All Food Service Workers | 1 | 1 | 0 | 0 | 0 |
| All Other Service Workers | 9 | 10 | 1 | 1 | 2 |
| TOTAL MAINTENANCE & PRODUCTION WORKERS | 1,120 | 1,220 | 100 | 132 | 232 |
| Mechanics, Automotive | 11 | 13 | 2 | 1 | 3 |
| All Other Mechanics & Repairers | 26 | 31 | 5 | 2 | 7 |
| Truck Drivers | 52 | 62 | 10 | 4 | 14 |
| Delivery & Route Workers | 63 | 77 | 14 | 5 | 19 |
| Supervisors, Nonworking | 39 | 44 | 5 | 4 | 9 |
| Industrial Truck Operators | 15 | 18 | 3 | 1 | 4 |
| Maintenance Repairers, General Utility | 12 | 14 | 2 | 1 | 3 |
| Order Fillers | 9 | 11 | 2 | 0 | 2 |
| Production Packagers, Hand or Machine | 24 | 29 | 5 | 4 | 9 |
| Sewing Machine Opers., Regular Equip.-Garment | 446 | 465 | 19 | 52 | 71 |
| All Assemblers | 8 | 9 | 1 | 2 | 3 |
| All Other Skilled Craft Workers | 78 | 85 | 7 | 9 | 16 |
| All Other Semiskilled Workers | 230 | 240 | 10 | 45 | 55 |
| All Other Laborers & Unskilled Workers | 107 | 122 | 15 | 2 | 17 |
| TOTAL CLERICAL WORKERS | 179 | 205 | 26 | 38 | 64 |
| All Office Machine Operators | 34 | 38 | 4 | 9 | 13 |
| Bookkeepers, Hand | 8 | 9 | 1 | 2 | 3 |
| General Clerks, Office | 28 | 37 | 9 | 6 | 15 |
| Secretaries | 8 | 12 | 4 | 2 | 6 |
| Typists (Including Clerk-Typists) | 11 | 12 | 1 | 3 | 4 |
| All Other Office Clerical Workers | 42 | 45 | 3 | 9 | 12 |
| Shipping Packers | 27 | 30 | 3 | 3 | 6 |
| Shipping &/or Receiving Clerks | 5 | 5 | 0 | 1 | 1 |
| All Other Plant Clerical Workers | 16 | 17 | 1 | 3 | 4 |
| TOTAL SALES WORKER | 43 | 51 | 8 | 6 | 14 |
| Sales Reps., Agents, &/or Associates | 42 | 50 | 8 | 6 | 14 |
| All Other Sales Workers | 1 | 1 | 0 | 0 | 0 |
| TOTAL ALL OCCUPATIONS | 1,589 | 1,827 | 238 | 210 | 448 |

Confidential date for certain occupations have been added to "All" or "All Other" categories or collapsed into major occupational classes as follows:

PROFESSIONAL WORKERS

All Engineers
Aeronautical Engineers

All Other Professional Workers
Writers &/or Editors
Reporters &/or Correspondents

SERVICE WORKERS

All Other Service Workers
Supervisors, Nonworking-Service Only

CURRENT AND PROJECTED ESTIMATED EMPLOYMENT AND JOB OPENINGS
MANUFACTURING

YUMA COUNTY (CONT'D.)

MAINTENANCE & PRODUCTION WORKERS

All Other Mechanics & Repairers
Coin/Vending Machine Servicers
Mechanics, Sewing Machine

All Other Skilled Craft Workers
Camera Operators, Printing
Butchers, All-Around
Sample Makers
Imposers & Makeup Arrangers

All Other Semiskilled Workers
Pressers, Hand
Inspectors
Sewing Machine Operators, Special Equip.-Garment
Sewing Machine Operators, Regular Equip.-Nongarment
Bundlers
Cutters, Portable Machine
Die Cutters &/or Clicking-Machine Operators
Grinding &/or Abrading Machine Operators, Metal
Lathe &/or Turning Machine Operators, Metal
Molders, Machine (Exc. Wax Molders)
Spreaders
Riveters, Light
Punch-Press Operators, Metal
Cutters, Hand
All Assemblers

MAINTENANCE & PRODUCTION WORKERS (CONT'D.)

All Other Laborers & Unskilled Workers
Helpers, Trades
Cooler Room Workers
Power Press Tenders
Work Distributors
Turners (Textile Products)

CLERICAL WORKERS

All Office Machine Operators
Bookkeeping &/or Billing Machine Operators
Keypunch Operators
Inserting &/or Labeling Machine Operators

All Other Office Clerical Workers
Payroll &/or Timekeeping Clerks
Customer Service Reps., Printing & Publishing
Telephone Ad-Takers, Newspaper

All Other Plant Clerical Workers
Stock Clerks, Stockroom, Warehouse, or Storage Yard

# METHODOLOGY

## Limitations of the Data

The projection methods do not account for cyclical, seasonal, and such factors as the sudden opening and closing of large establishments. Caution is advised in the use of employment forecast data for industries with limited employment - especially in the smaller counties. The establishment or closing of a single firm could have a profound effect on the county's employment and demand. The methodology also assumes that the labor market areas are self-contained and generally devoid of significant levels of commuting and migration from one area to another for employment.

The occupational data in this publication refer only to employees who earned a wage or salary. Self-employed and unpaid family workers are not represented in the statistics.

## Sample Selection and Response Rate

Occupational estimates for the manufacturing industry were developed from a survey of employers throughout the State. Employers who were asked to participate in the survey were selected from a master employer file of firms doing business in Arizona, using standardized sampling techniques. A sample of establishments employing 4-99 employees and all establishments having 100 or more employees were surveyed. The entire sample was composed of 1,866 firms with a usable response rate of 92.1 percent.

## Employment Projections

Manufacturing employment was projected using regression analysis and was adjusted to reflect recent industry developments. The 1984 occupational employment was calculated by applying staffing patterns ratios (as determined by the survey) to the industry projections.

## Job Openings

The difference between 1980 and 1984 employment for each occupation represents expected job openings due to growth. Job openings due to separations were calculated by interpolating 1970 and 1985 separation rates for each occupation[1] and applying them to the occupational employment projections. "Total job openings" is the sum of openings due to growth and separations.

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[1]"Tomorrow's Manpower Needs," Supplement No. 4, BLS, 1974, pp. 11-16.

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